

ANNEXURE-IV

Crop management strategies under aberrant weather conditions at Akola

Centre: **Akola** ACZ: **Semi-arid** AESR: **6.3** Soil type: **Inceptisols and Vertisols** Annual normal rainfall (mm): **818.6**

Normal date of onset of monsoon: **11th June (24 SMW)**

Normal date of withdrawal of monsoon: **30th Sept.(39 SMW)**

Crop: **Cotton**

Main Condition: Normal onset (24 SMW) **Sub-condition: No stress**

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140- 50days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suvarna (180-190 days) American Improved varieties AKH-081 (150-160 days), AKH-	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hyb-rid 3.5 to 5 Hirsutum improved 12 to 15 Arbo-reum improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs. 1600/ha) Opening of furrow with bullock 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers (NPK kg/ha) <ul style="list-style-type: none"> Arboreum improved 30-15:0 (Rs.1198/ha) Hirsutum improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 	<ul style="list-style-type: none"> Three hand weeding upto 60 days at 20 days interval (Rs.5400 /ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of 	<ul style="list-style-type: none"> Summer ploughing once in three years (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 Hirsutum improved 60 x 30 or 60 x 45 Arboreum improved 	<ul style="list-style-type: none"> Hy-brid 12-15 Hirsutum improved 10-12 Arboreum improved 7-8

8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days)	and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)			drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs. 400 /ha)	N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871)	(or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs. 1397/ha)	water (spraying of Diamethoate Rs.800/ ha) • For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyne 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha)	60 x 30 or 60 x 15 • Seed treatment by dung or mud for better sowing and germination (Rs.18/ha)	
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Main Condition: Normal onset (24 SMW)

Sub-condition: Initial stress at vegetative stage (20-30DAS)

1	2	3	4	5	6	7	8	9	10
reshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton:</p> <ul style="list-style-type: none"> Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 Hirsutum improved 12 to 15 Arbo-reum improved 15-20 	<ul style="list-style-type: none"> Four hoeings with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing with bullock drawn hoe for soil mulch 	<ul style="list-style-type: none"> FYM @5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) <ul style="list-style-type: none"> Arboreum improved 30-15:0 (Rs.1198/ha) Hirsutum improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing only after receipt of rains. 	<ul style="list-style-type: none"> Two hand weed-ings upto 60 days at 30 days interval Pre plant incur-poration of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyll Demeton 25% EC 8 ml (or) Acetamidrid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer plough-ing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 Hirsutum improved 60 x 30 or 60 x 45 Arbo-reum improved 60 x 30 or 60 x 15 Seed treat-ment by dung or mud for better sowing and germination (Rs.18 /ha) 	<ul style="list-style-type: none"> Hyb-rid 12-15 Hirsu-tum impro-ved 10-12 Arbo-reum impro-ved 7-8

				(Additional two hoeing s Rs.800/ha)			<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: Normal onset (24 SMW)

Sub-condition: Mid season stress at flowering stage (60-70DAS)

1	2	3	4	5	6	7	8	9	10
Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 improved 12 to 15 Arboreum improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by the tynes of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing s Rs.1200/ha) During Stress period one life saving irrigation of 6 cm if 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers (NP K kg/ha) <ul style="list-style-type: none"> Arboreum improved 30-15:0 Hirsutum improved 50:25:0 Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weeding upto 60 days at 30 days interval (Rs3600/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 Hirsutum improved 60x 30 or 60 x 45 Arboreum improved 60x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Hybrid 11-13 Hirsutum improved 9-11 Arboreum improved 7-8

				<p>harvested water is available in the farm pond.</p>		<p>Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha)</p> <p>• Bacterial blight: Seed treatment with Carboxyne 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha)</p> <p>• Dahiya : Sulphur dusting @ 20- 25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha)</p>		
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Main Condition: Normal onset (24 SMW)

Sub-condition: Terminal stress at boll development stage (105-130 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suvarna (180-190 days) American Improved varieties AKH-081 (150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<p>Hybrid 3.5 to 5</p> <ul style="list-style-type: none"> Hirsutum improved 12 to 15 Arboreum improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tynes of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing Rs.1200/ha) During stress period one life saving irrigation of 6 cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) Arboreum improved 30-15:0 (Rs.1198/ha) Hirsutum improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) 	<ul style="list-style-type: none"> Three hand weed-ings upto 60 days at 20 days interval Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<p>Summer ploughing once in three year (Rs.750)</p> <p>Spacing: Hybrid 90 x 60 or 60 x 60</p> <ul style="list-style-type: none"> Hirsutum improved 60 x 30 or 60 x 45 Arboreum improved 60 x 30 or 60 x 15 <p>Seed treatment by dung or mud for better sowing and germination (Rs.18/ha)</p>	<p>Hybrid 10-12</p> <p>Hirsutum improved 9-10</p> <p>Arboreum improved 6-8</p>

Main Condition: 15 days delay (26 SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
<p>Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improved 12 to 15 <i>Arboreum</i> improved 15-20 	<p>Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha)</p> <p>Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tynes of hoe (Rs.400/ha)</p>	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) Fertilizers(NP K kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) 	<ul style="list-style-type: none"> Three hand weedings upto 60 days at 20 days interval (Rs.5400/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergenc e Pendi-methalin @1kg ai/ha. (Rs.1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<p>Summer ploughing once in three year (Rs.750)</p> <p>Spacing: Hybrid 90 x 60 or 60 x 60</p> <ul style="list-style-type: none"> <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<p>Hybrid 12-15</p> <p><i>Hirsutum</i> improved 10-12</p> <p><i>Arboreum</i> improved 7-8</p>

							<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water. (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 15 days delay (26 SMW)

Sub-condition: Initial stress at vegetative stage (20-30DAS)

1	2	3	4	5	6	7	8	9	10
<p>Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suvarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planter. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 improved 12 to 15 <i>Hirsutum</i> improved 15-20 <i>Arboreum</i> improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing with bullock 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weedings upto 60 days at 30 days interval (Rs.3600/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Hybrid 12-15 <i>Hirsutum</i> improved 10-12 <i>Arboreum</i> improved 7-8

				<p>drawn hoe for soil mulch (Additional two hoeing Rs.800/ha)</p>			<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 15 days delay (26 SMW)

Sub-condition: Mid season stress at flowering stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton:</p> <ul style="list-style-type: none"> Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Rs.58 /ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improved 12 to 15 <i>Arbo-reum</i> improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing Rs.1200/ha) During Stress period one life saving irrigation of 6cm if harvested 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers (NP K kg/ha) <i>Arboreum</i> improved 30:15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677 /ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing after receipt of rain 	Two hand weed-ings upto 60 days at 30 days interval (Rs.3600/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha)	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18 /ha) 	Hybrid 9-11 <i>Hirsutum</i> improved 8-9 <i>Arbo-reum</i> improved 6-7

				water is available in the farm pond.		<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 15 days delay (26 SMW)

Sub-condition: Terminal stress at boll development stage (105-130DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58 /ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 improved 12 to 15 improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing Rs.1200/ha) During stress period one life saving irrigation of 6 cm if harvested 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NP K kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677 /ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) 	<ul style="list-style-type: none"> Two hand weedings upto 60 days at 30 days interval (Rs.3600 /ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397 /ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Hybrid 7-9 <i>Hirsutum</i> improved 6-9 <i>Arboreum</i> improved 5-6

				water is available in the farm pond.		<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 30 days delay (28 SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton:</p> <ul style="list-style-type: none"> Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 improved 15 to 18 <i>Hirsutum</i> improved 19-22 <i>Arboreum</i> improved plant to plant spacing . 	<ul style="list-style-type: none"> Three hoeing with bullock drawn hoe at 25 days interval starting at 15 DAS (Rs.1200 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NP K kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) 	<ul style="list-style-type: none"> Three hand weedings upto 60 days at 20 days interval (Rs.5400 /ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397 /ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ ha) Reduce one or two rows of cotton and replace by 	<ul style="list-style-type: none"> Hybrid 9-12 <i>Hirsutum</i> improved 8-9 <i>Arboreum</i> improved 7-8

							<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	pigeon pea	
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Main Condition: 30 days delay (28 SMW)

Sub-condition: Initial stress at vegetative stage (20-30DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varie-ties seed is treated with Azoto-bacter and Thiram (Rs.58 /ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 improved 15 to 18 <i>Hirsutum</i> improved 19-22 <i>Arboreum</i> improved 19-22 Increase plant to plant spacing 	<ul style="list-style-type: none"> Three hoeing with bullock drawn hoe at 25 days interval starting at 15 DAS (Rs.1200 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NP K kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weed-ings upto 60 days at 30 days interval (Rs.3600/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) Reduce one or two rows of cotton and replace by pigeonpea 	<ul style="list-style-type: none"> Hybrid 8-10 <i>Hirsutum</i> improved 7-9 <i>Arboreum</i> improved 6-7

							<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 30 days delay (28 SMW)

Sub-condition: Mid season stress at flowering stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arboreum</i> improved 19-22 Increase plant to plant spacing 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of ho (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing Rs.1200/ha) During Stress period one life saving irrigation of 6cm if 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weed-ings upto 60 days at 30 days interval (Rs.3600/ha) Pre plant incorporation of Fluchloral-ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ ha) 	<ul style="list-style-type: none"> Hybrid 6-8 <i>Hirsutum</i> improved 5-6 <i>Arboreum</i> improved 5-6

				harvested water is available in the farm pond.		<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Main Condition: 30 days delay (28 SMW)

Sub-condition: Terminal stress at boll development stage (105-130DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days), American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy-2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton:</p> <ul style="list-style-type: none"> Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arbo-reum</i> improved 19-22 Increase plant to plant spacing 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing (Rs.1200/ha) During Stress period one life saving irrigation of 6 cm if 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NP K kg/ha) <i>Arboreum</i> improved 30:15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1677 /ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal (Rs.1871) 	<ul style="list-style-type: none"> Three hand weedings upto 60 days at 20 days interval (Rs.5400/ha) Pre plant incorporation of Fluchloral-in @1kg ai/ha/ (or) Pre emer-gence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Hybrid 4.5-5.5 <i>Hirsutum</i> improved 4-5 <i>Arboreum</i> improved 4-6

				harvested water is available in the farm pond			<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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Source of Seed: 1) University's Agricultural Research Stations
4) Central Institute for Cotton Research, Nagpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Cropping System: Cotton based intercropping systems [Cotton+Greengram (1:1), cotton+sorghum (8:2) and cotton+pigeonpea (8:2)]

Main Condition: Normal onset (24 SMW) Sub-condition: No stress

165

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days)	<ul style="list-style-type: none"> One harrow-ing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow. (Rs.1250 /ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900 /ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58 /ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improved 12 to 15 <i>Arboreum</i> improved 15-20 Green gram 10-12 Sorghum 7.5-10 Pigeon pea 12-14 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) Fertilizers (NPK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667 /ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	<ul style="list-style-type: none"> Three hand weeding upto 60 days at 20 days interval (Rs.5400 /ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397 /ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachlopid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 l water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 8-12, GG 6-7, Cotton + sorghum: Cotton 6-10, Sorghum 7-8, Cotton +PP: Cotton 6-10, PP 5-6

<p>Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60- 70days crop duration Pigeonpea : C-11 and ICPL- 87119</p>	<p>sowing by dibbling method. (Rs.1500 /ha)</p>					<ul style="list-style-type: none"> • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20- 25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 		
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GG –Greengram, PP – Pigeonpea

Main Condition: Normal onset (24 SMW)

Sub-condition: Initial stress at vegetative stage (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . • Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.1250/ha) • Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> • Seeds treated by company are used for hybrids. • For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> • Hybrid 3.5 to 5 • <i>Hirsutum</i> improved 12 to 15 • <i>Arboreum</i> improved 15-20 	<ul style="list-style-type: none"> • Four hoeings with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing with bullock drawn hoe for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) • <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) • Hybrid 50:25:25 (Rs.1871) • N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal • Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> • Two hand weeding upto 60 days at 30 days interval (Rs.3600/ha) • Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-metha-lin @1kg ai/ha. (Rs. 1397/ha) 	<ul style="list-style-type: none"> • For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. • For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) • For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) • For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) • Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) • Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> • Summer ploughing once in three year (Rs.750) • Spacing: Hybrid 90 x 60 or 60 x 60 • <i>Hirsutum</i> improved 60 x 30 or 60 x 45 • <i>Arboreum</i> improved 60 x 30 or 60 x 15 • Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> • Cotton + GG: Cotton 7-12, GG 5-6, • Cotton + sorghum : Cotton 5-7, Sorghum 7-8, • Cotton+ PP: Cotton 5-7, PP 5-6

Main Condition: Normal onset (24 SMW)

Sub-condition: Mid season stress at flowering stage (60-70DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 Hirsu-tum improved 12 to 15 Arbor-eum improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tynes of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeings Rs.1200/ha) During stress period one life saving irrigation of 6cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers (NPK kg/ha) Arboreum improved 30-15:0 (Rs.1198/ha) Hirsutum improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weeding upto 60 days at 30 days interval (Rs.3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs.1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyne 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 Hirsutum improved 60 x 30 or 60 x 45 Arboreum improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs. 18/ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 7-11, GG 4-5, Cotton + sorg-hum: Cotton 5-7, Sorg-hum 5.5-6.5, Cotton+ PP: Cotton 5-7, PP 5-6

Main Condition: Normal onset (24 SMW)

Sub-condition: Terminal stress at boll development stage (105-130DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thirum (Cost Rs. 58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsu-tum</i> improved 12 to 15 <i>Arboreum</i> improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tynes of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing Rs.1200/ha) During stress period one life saving irrigation of 6 cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	<ul style="list-style-type: none"> Three hand weedings upto 60 days at 20 days interval (Rs.5400 /ha) Pre plant incorporation of Fluchlor-alin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397 /ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 6-10, GG 4-5, Cotton + sorg-hum: Cotton 4-6, Sorg-hum 4-5, Cotton+ PP: Cotton 4-6,PP 4-5

Main Condition: 15 days delay (26 SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow . (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha)	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improved 12 to 15 <i>Arboreum</i> improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tynes of hoe (Rs. 400/ ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	Three hand weeding upto 60 days at 20 days interval (Rs.5400/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ ha)	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Cotton + GG Cotton 7-12, GG 6-7, Cotton + sorg-hum: Cotton 4-6, Sorg-hum 5-6, Cotton+ PP: Cotton 4-6, PP 3-4

Main Condition: 15 days delay (26 SMW)

Sub-condition: Initial stress at vegetative stage (20-30DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<p>• One harrowing with tractor drawn cultivator before onset of monsoon</p> <p>• After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow .</p> <p>• Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha)</p> <p>Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha)</p>	<p>• Seeds treated by company are used for hybrids.</p> <p>• For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha)</p>	<p>• Hybrid 3.5 to 5</p> <p>• <i>Hirsutum</i> improved 12 to 15</p> <p>• <i>Arboreum</i> improved 15-20</p>	<p>• Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha)</p> <p>• Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha)</p> <p>• Reduce plant population by 20% (Rs.480/ha)</p> <p>• Frequent hoeing with bullock drawn hoe for soil mulch (Additional two hoeings Rs.800/ha)</p>	<p>• FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha)</p> <p>• Fertilizers(NPK kg/ha)</p> <p>• <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha)</p> <p>• <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha)</p> <p>• Hybrid 50:25:25 (Rs.1871)</p> <p>• N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal</p> <p>• Apply top dressing after receipt of rain</p>	<p>Two hand weeding upto 60 days at 30 days interval (Rs.3600/ha)</p> <p>Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha)</p>	<p>• For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 l. water.</p> <p>• For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha)</p> <p>• For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha)</p> <p>• For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha)</p> <p>• Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ha)</p> <p>• Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha)</p>	<p>• Summer ploughing once in three year (Rs.750)</p> <p>• Spacing: Hybrid 90 x 60 or 60 x 60</p> <p>• <i>Hirsutum</i> improved 60 x 30 or 60 x 45</p> <p>• <i>Arboreum</i> improved 60 x 30 or 60 x 15</p> <p>• Seed treatment by dung or mud for better sowing and germination (Rs.18/ha)</p>	<p>• Cotton + GG: Cotton 7-12, GG 4-5,</p> <p>• Cotton + sorghum: Cotton 5-7, Sorghum 6-7,</p> <p>• Cotton+ PP: Cotton 5-7, PP 5-6</p>

Main Condition: 15 days delay (26 SMW)

Sub-condition: Mid season stress at flowering stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081 (150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy-4 (170-180 days) & PKV Hy-5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improved 12 to 15 <i>Arboreum</i> improved 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeing (Rs.1200/ha)) During stress period one life saving irrigation of 6 cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal Apply top dressing after receipt of rain 	<p>Two hand weeding upto 60 days at 30 days interval</p> <p>Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha)</p>	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyne 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18 /ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 6-9, GG 3-4, Cotton + sorghum : Cotton 5-7, Sorghum 5-7, Cotton+ PP: Cotton 5-7, PP 4-5

Main Condition: 15 days delay (26 SMW)

Sub-condition: Terminal stress at boll development stage (105-130 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days),AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 150-160days Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 3.5 to 5 <i>Hirsutum</i> improve d 12 to 15 <i>Arboreum</i> improve d 15-20 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeings Rs.1200/ha) During stress period one life saving irrigation of 6 cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs.10480/ha) Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	<ul style="list-style-type: none"> Two hand weed-ings upto 60 days at 30 days interval (Rs.3600 /ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs.1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachlopid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 5-7, GG 4-5, Cotton + sorghum: Cotton 3.5-5, Sorghum 4-6, Cotton+ PP: Cotton 3.5-5, PP 3-4

Main Condition: 30 days delay (28 SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arboreum</i> improved 19-22 Increase plant to plant spacing 	<p>Three hoeing with bullock drawn hoe at 25 days interval starting at 15 DAS (Rs.1200/ha)</p> <p>Ope-ning of furrow with bullock drawn hoe at last hoeing by tying rope on the tye of hoe (Rs.400 /ha)</p>	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(NPK kg/ha) <i>Arboreum</i> improved 30-15 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	<ul style="list-style-type: none"> Three hand weeding upto 60 days at 20 interval (Rs.5400/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ha) Bacterial blight: Seed treatment with Carboxyne 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyne 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) Reduce one or two rows of cotton and replace by pigeonpea 	<ul style="list-style-type: none"> Cotton + GG: Cotton 7-9, GG 2-3, Cotton + sorghum : Cotton 3-5, Sorghum 3-5, Cotton+ PP: Cotton 3-5, PP 5-6

Main Condition: 30 days delay (28 SMW)

Sub-condition: Initial stress at vegetative stage (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deshi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arbore-um</i> improved 19-22 Increase plant to plant spacing 	<ul style="list-style-type: none"> Three hoeing with bullock drawn hoe at 25 days interval starting at 15 DAS (Rs.1200/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198 /ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667 /ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal Apply top dressing after receipt of rain 	<ul style="list-style-type: none"> Two hand weedings upto 60 days at 30 days interval (Rs.3600 /ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs1397 /ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachlopid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) Reduce one or two rows of cotton and replace by pigeonpea 	<ul style="list-style-type: none"> Cotton + GG: Cotton 6-8, GG-2, Cotton +sorghum: Cotton 3-4, Sorghum 3-4, Cotton+ PP: Cotton 3-4, PP 5-6

Main Condition: 30 days delay (28 SMW)

Sub-condition: Mid season stress at flowering stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70days crop duration Pigeonpea : C-11 and ICPL-87119</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<p>Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azoto-bacter and Thiram. (Cost Rs.58/ha)</p>	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arboreum</i> improved 19-22 Increase plant to spacing 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs. 400 /ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeings Rs.1200/ha) During stress period one life saving irrigation of 6 cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Fertilizers (NPK kg/ha) <i>Arboreum</i> improved 30:15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal Apply top dressing after receipt of rain 	<p>Two hand weeding upto 60 days at 30 days interval Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs1397/ha)</p>	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpayirphos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyriphos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<p>Summer ploughing once in three year (Rs.750)</p> <p>Spacing: Hybrid 90 x 60 or 60 x 60</p> <p><i>Hirsutum</i> improved 60 x 30 or 60 x 45</p> <p><i>Arboreum</i> improved 60 x 30 or 60 x 15</p> <p>Seed treatment by dung or mud for better sowing and germination (Rs.18/ha)</p>	<p>Cotton + GG: Cotton 5-6, GG 1-2, Cotton + sorghum: Cotton 3-4, Sorghum 3-4, Cotton+P P: Cotton 3-4, PP 4-5</p>

Main Condition: 30 days delay (28 SMW)

Sub-condition: Terminal stress at boll development stage (105-130 DAS)

1	2	3	4	5	6	7	8	9	10
Desi improved AKA-5 (170-180days), AKA-7 (140-150days), AKA-8 (170-180days), Deshi hybrids: PKVDH-1, PDKV Suwarna (180-190 days) American Improved varieties AKH-081(150-160 days), AKH-8828, PKV-Rajat (170-180 days), American Hybrid varieties PKV Hy- 2, PKV Hy- 4 (170-180 days) & PKV Hy- 5 (150-160 days) Greengram (Kopergaon, TARM-2, TARM-18, PKV Mug 8802) 60-70 days crop duration Pigeonpea : C-11 and ICPL-87119	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow. (Rs.1250/ha) Sowing with the bullock drawn marker tying sarata for drilling and seed covering with bullock drawn planker. (Rs.900/ha) Sowing of Hybrid cotton: Marking by bullock drawn marker and sowing by dibbling method. (Rs.1500/ha) 	<ul style="list-style-type: none"> Seeds treated by company are used for hybrids. For straight varieties seed is treated with Azotobacter and Thiram (Cost Rs.58/ha) 	<ul style="list-style-type: none"> Hybrid 4.5 to 6 <i>Hirsutum</i> improved 15 to 18 <i>Arboreum</i> improved 19-22 Increase plant to plant spacing 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval starting at 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyre of hoe (Rs.400/ha) Frequent hoeing with bullock drawn hoe for soil mulch (Additional three hoeings Rs.1200/ha) During stress period one life saving irrigation of 6cm if harvested water is available in the farm pond. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) Fertilizers(N PK kg/ha) <i>Arboreum</i> improved 30-15:0 (Rs.1198/ha) <i>Hirsutum</i> improved 50:25:0 (Rs.1667/ha) Hybrid 50:25:25 (Rs.1871) N is applied in two equal splits as basal and top dressing at 30DAS. Full P&K are applied as basal 	<ul style="list-style-type: none"> Three hand weeding upto 60 days at 20 days interval (Rs.5400/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendi-methalin @1kg ai/ha. (Rs.1397/ha) 	<ul style="list-style-type: none"> For controlling sucking pests (Aphids, jassids and mites) Seed treatment of Imidachloprid 70 WS 10 gm /kg seed (or) Dimethoate 30% 10 ml (or) Methyl Demeton 25% EC 8 ml (or) Acetamiprid 20% WSP 1.5 gm in 10 lit. water. For white fly Methyl Demeton 25% EC 40ml (or) Dimethoate 30% 33ml (or) Trizophos 25% 10ml in 10lit. of water (spraying of Diamethoate Rs.800/ ha) For mealy bug : Acephate 75% 30gm (or) chlorpyrifos 20% 30ml (or) Triazophos 40% 20ml in 10 lits of water (spraying of chloropyrifos Rs.693/ ha) For bollworms : HANPV 250 LE/ha and Spinosad 45 SC 2.22ml (or) Endosulphan 35% 17ml (or) Quinolphos 25% 20ml Fosalon 35% 14ml in 10 lits of water (spraying of Endosulphan Rs.650/ ha) Bacterial blight: Seed treatment with Carboxyine 1gm +3gm thiram. Spraying of 1gm Streptocycline of 25gm Copper oxichloride in 10lit of water (Carboxyine 1gm +3gm Thiram. Rs.41/ ha) Dahiya : Sulphur dusting @ 20-25kg (300mesh) (or) spray sulphur WP 25g in 10lit of water (spraying of Sulphur WP Rs 325/ ha) 	<ul style="list-style-type: none"> Summer ploughing once in three year (Rs.750) Spacing: Hybrid 90 x 60 or 60 x 60 <i>Hirsutum</i> improved 60 x 30 or 60 x 45 <i>Arboreum</i> improved 60 x 30 or 60 x 15 Seed treatment by dung or mud for better sowing and germination (Rs.18/ha) 	<ul style="list-style-type: none"> Cotton + GG: Cotton 5-5, GG 1-2, Cotton + sorgum: Cotton 2-3, Sorghum 3-4, Cotton+ PP: Cotton 2-3, PP 2-3

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute for Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Soybean

Main Condition: Normal onset (24 SMW) Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn MB plough (Rs.750/ha) 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> • Thiram 3g /kg (Thiram Rs.81/ha) (or) • Thiram 2g + 1g Carbendazim • (or) Trichoderma 4 g/kg seed + Rhizobium + PSB 25 g/kg seed (Trichoderma Rhizobium and PSB Rs.194/ha) 	75	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75 kg NP/ha applied as basal (Rs.2616 /ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosulfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5 cm	20-25

Main Condition: Normal onset (24 SMW)

Sub-condition: Initial stress at vegetative stage (20-30DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thiram Rs.81/ha) (or) Thiram 2g + 1g Carbendazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 30:75:k g NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosulfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630/ha (or) Dimethoate cost Rs.597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	20-25

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (40-60 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs. 81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha). 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 30:75:kg NP/ha applied as basal (Rs.2616 /ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pen-dimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	15-19

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (75-85 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107 days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g/kg (Thiram Rs. 81/ha) (or) Thiram 2g + 1g Carbendazim (or) Trichoderma 4 g/kg seed + Rhizobium + PSB 25 g/kg seed (Trichoderma Rhizobium and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs. 800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs. 400/ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha). 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75:kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	12-15

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38 (90-95 days), TAMS-98-21 (99-107 days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs.81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma</i> , <i>Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha) (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	20-25

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs.81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma Rhizobium and PSB</i> Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (<i>Endosulfan</i> Rs.630 /ha (or) <i>Dimethoate</i> cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (<i>Endosulfan</i> Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	20-25

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (40-60 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90- 95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thiram Rs.81/ha) (or) Thiram 2g + 1g Carbendazim (or) Trichoderma 4 g/kg seed + Rhizobium + PSB 25 g/kg seed (Trichoderma Rhizobium and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha). 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosulfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	15-19

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (75-85 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90- 95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs.81/ha) (or) Thiram 2g + 1g Carbend-azim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma Rhizobium and PSB</i> Rs.194 /ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha). 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendime-thalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	Spacing 45x5cm	12-15

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn MB plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs.81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma, Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfans Rs. 630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	<ul style="list-style-type: none"> • Spacing 45x5cm • Soybean + pigeonpea intercropping 2:1, 6:1, 9:1 row propora-tions 	10-12

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thiram Rs.81/ha) (or) Thiram 2g + 1g Carbendazim (or) Trichoderma 4 g/kg seed + Rhizobium + PSB 25 g/kg seed (Trichoderma, Rhizobium and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630/ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	<ul style="list-style-type: none"> • Spacing 45x5cm • Soybean + pigeonpea intercropping 2:1, 6:1, 9:1 row proportions 	10-12

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (40-60 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thirum Rs.81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma</i> , <i>Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400/ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha). 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616/ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre-emergence Pendimethal in @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	<ul style="list-style-type: none"> • Spacings 45x5cm • Soybean + pigeon-pea inter-cropping 2:1, 6:1, 9:1 row proportions 	8-10

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain filling stage (75-85 DAS)

1	2	3	4	5	6	7	8	9	10
JS-335 (95-100 days), TAMS-38(90-95days), TAMS-98-21 (99-107days)	<ul style="list-style-type: none"> • Summer ploughing once in 3 years with tractor drawn M B plough (Rs.750/ha) • 2 harrowing with tractor drawn cultivator (Rs.1250/ha) • After receiving 50-75 mm rainfall , one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering (Rs.1525/ha) 	Thiram 3g /kg (Thiram Rs.81/ha) (or) Thiram 2g + 1g Carben-dazim (or) <i>Trichoderma</i> 4 g/kg seed + <i>Rhizobium</i> + PSB 25 g/kg seed (<i>Trichoderma</i> , <i>Rhizobium</i> and PSB Rs.194/ha)	75	<ul style="list-style-type: none"> • Two hoeing at 15-20 days interval starting at 15 DAS (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at second hoeing at 30-35 DAS (Rs.400 /ha) • One protective irrigation of 5cm with sprinkler (Rs.500/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 30:75: kg NP/ha applied as basal (Rs.2616 /ha) 	<ul style="list-style-type: none"> • One hand weeding at 20-25DAS (Rs.1800/ha) • Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha) (or) Imazethapyr @75g ai/ha as early post emergence 15-20 DAS (Rs.1650/ ha) 	<ul style="list-style-type: none"> • For controlling girdle beetle and semi looper: Dimethoate 30% EC 10 ml (or) Endosuplfan 35% 15 ml in 10 lit. of water (Endosulfan Rs.630 /ha (or) Dimethoate cost Rs. 597/ha) • For spodoptera: Endosulfan 35% EC 15 ml in 10 lit. of water (Endosulfan Rs.630/ ha) (or) Methyl parathion 2% dust (or) Quinolphos 1.5% dust or Endosulfan 4% dust @ 20 kg/ha 	<ul style="list-style-type: none"> • Spacings 45x5cm • Soybean + pigeon-pea intercrop -ing 2:1, 6:1, 9:1 row proportions 	6-8

Source of Seed: 1) University's Agricultural Research Stations
4 Directorate of Soybean Research, Indore

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Sorghum

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
<p>Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616</p>	<p>3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha)</p>	<p>Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)</p>	<p>7.5 -10</p>	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) 80:40:40 kg NPK/ha (Rs. 2706/ha) N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)</p>	<ul style="list-style-type: none"> For controlling shoot fly Timely sowing (25 June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ha) 	<ul style="list-style-type: none"> Spacing 45 cm x 10-12 cm Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> Hybrids 48-50 Varieties 35-38

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 80:40:40 kg NPK/ha (Rs. 2706/ ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> • Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum + green gram (3:3), sorghum + pigeon pea (3:3) and cotton + sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 36-38 • Varieties 26-28

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (50-60 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 80:40:40 kg NPK /ha (Rs. 2706 /ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emer-gence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> • Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 x 10-12 cm • Sorghum based intercropp ing system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeonpea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 24-25 • Varieties 18-20

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> 3-4 Summer harro-wing with tractor drawn cultivator (Rs. 1875-2500/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24/ ha)	7.5 -10	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tye of hoe (Rs.400/ha) One protective irrigation of 5cm 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480 /ha) 80:40:40 kg NPK/ha (Rs. 2706 /ha) N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> Spacing 45 cm x 10-12 cm Sorghum based intercropping system include sorghum + green gram (3:3), sorghum + pigeon pea (3:3) and cotton + sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> Hybrids 18-20 Varieties 14-15

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525 /ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400 /ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 80:40:40 kg NPK/ha (Rs. 2706/ ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> • Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum+ pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 48-50 • Varieties 35-38

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616</p>	<ul style="list-style-type: none"> • 3-4 Summer harrow-wing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-wing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	<p>Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs.24/ha)</p>	<p>7.5 -10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ha (Rs. 2706 /ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<ul style="list-style-type: none"> • Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) • Pre emergence Atrazin @1.0kg ai/ha (Rs.1004 / ha) 	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> • Timely sowing (25 June - 7th July) • Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyrifos 20% EC 25ml in 10lit in water (chloropyrifos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum+ pigeonpea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 36-38 • Varieties 26-28

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (50-60 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616</p>	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-wing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	<p>Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ ha)</p>	<p>7.5-10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400 /ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 80:40:40 kg NPK/ha (Rs. 2706 /ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. (Rs.3600/ ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)</p>	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+sorghum +pigeon pea+sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 24-25 • Varieties 18-20

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harro-wing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harro-wing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24 / ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) • One protective irrigation of 5cm 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ha (Rs. 2706 /ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum+ pigeonpea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 18-20 • Varieties 14-15

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
<p>Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616</p>	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<p>Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24/ha)</p>	<p>7.5 -10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 80:40:40 kg NPK/ha (Rs. 2706/ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)</p>	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum+ pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 29-30 • Varieties 21-23

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-wing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbend-azim /kg of seed (Rs. 24/ ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706/ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum+ pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 22-23 • Varieties 16-18

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (50-60 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> • 3-4 Summer harrow-ing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24 /ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) • One protect-ive irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorpo-rate at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ha (Rs. 2706/ha) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emer-gence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropp ing system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum+ pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Hybrids 14-15 • Varieties 11-12

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
Early Hybrids- CSH-14* and CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) Improved Varieties: SPV-669*, SPV-15, PVK-400 & SPV-1616	<ul style="list-style-type: none"> 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ ha)	7.5 -10	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ha) One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480 /ha) 80:40:40 kg NPK /ha (Rs.2706 /ha) N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal) 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<p>For controlling shoot fly</p> <ul style="list-style-type: none"> Timely sowing (25June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (chloropyriphos spray Rs.658/ha) (Or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> Spacing 45 cm x 10-12 cm Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+sorghu m+pigeon pea+sorghum 6:1:2:1 	Hybrids 10-11 Varieties 8-9

*Suitable for ratooning

Note- In case of application pre-emergence herbicides skip initial one hoeing and weeding

Source of Seed: 1) University's Agricultural Research Stations
4) Directorate of Sorghum Research, Hyderabad

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Cropping system: Sorghum based intercropping systems [sorghum+soybean (3:3) and sorghum + pigeonpea (3:3)]

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
<p>Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)</p>	<p>• 3-4 Summer harrowing with tractor drawn cultivator (Rs.1875-2500/ha) • After receiving rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha)</p>	<p>Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs.24/ha)</p>	<p>Sorghum 7.5 -10 Pigeon-pea 12-15 Soybean 75</p>	<p>• Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400/ ha)</p>	<p>• FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 80:40:40 kg NPK/ ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal</p>	<p>Two hand weeding at 20 days interval from sowing (Rs.3600/ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)</p>	<p>• For controlling shoot fly Timely sowing (25 June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ha)</p>	<p>• Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeon pea + sorghum 6:1:2:1</p>	<p>• Sorghum 17-25 • Pigeon-pea 4-6 • Soy-bean 10-15</p>

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)</p>	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	<p>Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ ha)</p>	<p>7.5 -10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tye of hoe (Rs. 400/ ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. (Rs.3600/ ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)</p>	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum + green gram (3:3), sorghum + pigeon pea (3:3) and cotton+ sorghum + pigeon pea+ sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 15-20 • Ppea 4-6 • Soybean 10-15

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (50-60DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100- 105 days) Medium duration hybrids- CSH-9, CSH- 16, CSH-18, CSH-25, SPH- 388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90- 95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL- 87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrow-ing with tractor drawn cultivator (Rs.1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525 /ha) 	Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 / ha) Pre emer-gence Atrazin @1.0kg ai /ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropp ing system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton +sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 10-12 • Ppea 3-5 • Soybean 8-10

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)</p>	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	<p>Thiram 3g or Thiram 2g + 1g Carben-dazim /kg of seed (Rs. 24/ha)</p>	<p>7.5-10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ ha) • One Protect-tive irrigation of 5cm . 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emer-gence Atrazin @1.0kg ai/ha (Rs.1004/ ha)</p>	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton+ sorghum + pigeonpea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 7-10 • Ppea 2-3 • Soybean 6-7

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrow-ing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrow-ing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 / ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeonpea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 20-22 • Ppea 4-6 • Soybean 10-12

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)</p>	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ ha) 	<p>Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)</p>	<p>7.5 -10</p>	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	<p>Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)</p>	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 13-15 • Ppea 4-6 • Soybean 10-15

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (50-60 DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525 /ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs.24/ ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400 /ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600/ ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeonpea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 10-12 • Ppea 3-5 • Soybean 7-9

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs.1875-2500 /ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525 /ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs.24 ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400 /ha) • One protective irrigation of 5cm . 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004 / ha)	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeonpea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 7-10 • Ppea 2-3 • Soybean 6-7

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs.24/ha)	7.5 -10	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 - 20 days interval from sowing (Rs.800 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs. 10480 /ha) 80:40:40 kg NPK/ha (Rs. 2706) N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<ul style="list-style-type: none"> For controlling shoot fly Timely sowing (25June - 7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> Spacing 45 cm x 10-12 cm Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> Sorghum 12-15 Ppea 3-5 Soybean 5-6

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs. 1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs.400 /ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ha)	<ul style="list-style-type: none"> • For controlling shoot fly • Timely sowing (25 June - 7th July) Endosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endosulfan 35% 14ml in 10lit. of water (Endosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeon pea + sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 9-12 • Ppea 3-5 • Soybean 5-6

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (50-60 DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs.1875-2500/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing by Bullock drawn seed drill and seed covering (Rs.1525/ ha) 	Thiram 3g or Thiram 2g + 1g Carbendazim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400/ ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. (Rs.3600 /ha) Pre emergence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25June -7th July) Endlosulfan 35% 14ml in 10lit. of water 7 and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or) Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum + pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 6-8 • Ppea 3-4 • Soybean 4-5

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain filling stage (70-80 DAS)

1	2	3	4	5	6	7	8	9	10
Sorghum: CSH-14, CSH-17 (100-105 days) Medium duration hybrids- CSH-9, CSH-16, CSH-18, CSH-25, SPH-388 and SPH-840 (110-115 days) soybean : JS-335 (95-100 days), TAMS-38 (90-95days), TAMS-98-21 (99-107days) Pigeonpea C-11, ICPL-87119 (180-200days)	<ul style="list-style-type: none"> • 3-4 Summer harrowing with tractor drawn cultivator (Rs.1875-2500 /ha) • After receiving rainfall, one harrowing with tractor drawn blade harrow • Sowing by bullock drawn seed drill and seed covering (Rs.1525/ha) 	Thiram 3g or Thiram 2g + 1g Carbenda-zim /kg of seed (Rs. 24/ha)	7.5 -10	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 -20 days interval from sowing (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe (Rs. 400 /ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 80:40:40 kg NPK/ha (Rs. 2706) • N is applied in two equal splits as basal and top dressing 30 DAS, and full P&K as basal 	Two hand weeding at 20 days interval from sowing. Pre emer-gence Atrazin @1.0kg ai/ha (Rs.1004/ ha)	<ul style="list-style-type: none"> • For controlling shoot fly Timely sowing (25 June-7th July) Endlosulfan 35% 14ml in 10lit. of water and 17 DAS • For control of stem borer Endlosulfan 35% 14ml in 10lit. of water (Endlosulfan spray Rs.620/ha) (or) Chloropyriphos 20% EC 25ml in 10lit in water (Chloropyriphos spray Rs.658/ha) (or) release of <i>Trichogramma chilonis</i> egg parasite in field @ 1.5lakh/ha 30-40DAS • For jassid/aphid control Dimethoate 30% EC 10ml (or)Methyl demeton 25% EC 8ml (or) Endlosulfan 35% 14ml in 10lit. of water (Dimethoate spray Rs.577/ha) 	<ul style="list-style-type: none"> • Spacing 45 cm x 10-12 cm • Sorghum based intercropping system include sorghum+ green gram (3:3), sorghum+ pigeon pea (3:3) and cotton + sorghum+ pigeon pea +sorghum 6:1:2:1 	<ul style="list-style-type: none"> • Sorghum 6-8 • Ppea 2-3 • Soybean 3-4

*Suitable for ratooning, Note: In case of application of pre-emergence herbicides skip initial one hoeing and weeding

Source of Seed: 1) University's Agricultural Research Stations
4) Directorate of Sorghum Research, Hyderabad

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Pigeonpea

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g or Carbendazim 2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration) 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs. 1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ ha) 25:50:00 NPK kg/ha (Rs.1964 /ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> Suitable for inter-cropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 110-150d) 60x30 (135 x 160days) 	8-12

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or+carbenda zim (2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 25:50:00 NPK kg/ha (Rs.1964/ ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	8-12

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625 /ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525 /ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + carben-dazim (2g/kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Frequent hoeing for soil mulch (Additional three hoeing Rs.1200/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorpora-ted at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964 /ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha)</p> <p>(or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha)</p> <p>(or) Fenthodate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 • (135 x 160days) 	6-10

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days) Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days) Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> • <i>Rhizo-bium</i> + PSB 25g /kg seed + thiram @ 3g or + carbendazim 2g/ kg seed (Rs.71/ha) 	<ul style="list-style-type: none"> • 12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration) 	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	4-6

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + carbendazim 2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration)</p> <p>30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs.3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ha)</p>	<p>Helicoverpa:</p> <p>Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 • (135 x 160days) 	8-12

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days) Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days) Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizo-bium</i> + PSB 25g /kg seed + thiram @ 3g or + carbendazim 2g/ kg seed (Rs. 71 /ha)</p>	<p>12-15 (for 160-200 and 135-160 days du-ration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs. 800 /ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 / ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercrop-ing with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	8-12

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g/kg seed + thiram @ 3g or + carbendazi m (2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Frequent hoeing for soil mulch (Additional three hoeing Rs.1200/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa:</p> <p>Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10 l water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	6-10

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g/kg seed + thiram @ 3g or carbendazim (2g/kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs. 1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400 /ha) One protective irrigation of 5cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:50:00 NPK kg/ha (Rs.1964 /ha) 	<p>Two hand weeding (Rs.3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 110-150d) 60x30 (135 x 160days) 	4-6

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or carbendazim (2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration (for 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	6-10

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or carbendazim 2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964/ha) 	<p>Two hand weeding (Rs.3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 (135 x 160days) 	6-10

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625 /ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + carbendazi m (2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs. 1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Frequent hoeing for soil mulch (Additional three hoeing Rs.1200/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 25:50:00 NPK kg/ha (Rs.1964 /ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Preplant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 • (135 x 160days) 	5-7

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Deep soils*: C-11, ICPL-87119 (180-200days)</p> <p>Medium deep: BDN-2, BSMR-736, BSMR-853, ICP-8863 and PKV Tara (165-180 days)</p> <p>Medium: TAT-10, T-Vishakha, AKT-8811 (110-150 days)</p>	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625 /ha) After receiving rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + carbendazim (2g/ kg seed (Rs.71/ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration (for 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) One protective irrigation of 5cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) 25:50:00 NPK kg/ha (Rs.1964 /ha) 	<p>Two hand weeding (Rs3600/ha)</p> <p>Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin @ 1kg ai/ha. (Rs.1397/ ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 110-150d) 60x30 (135 x 160days) 	4-5

*Recommended for intercropping & # Depending on the type of variety (early, medium and late)

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute of Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Cropping system: Pigeonpea based intercropping systems [Pigeonpea+Soybean (2:4 or 1:2) and Pigeonpea+Sorghum (3:3)]

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Pigeon pea : C-11 and ICPL-87119 Soybean : JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g/kg seed + thiram @ 3g + Carbendazim 2g/kg seed (Rs.71/ha)	<ul style="list-style-type: none"> Pigeonpea 12-15 Soybean 75 Sorghum 7.5-10 	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) 25:50:00 NPK kg/ha (Rs.1964) 	<ul style="list-style-type: none"> Two hand weeding (Rs.3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin @1kg ai/ha. (Rs.1397/ha) 	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> Suitable for intercropping with cotton, sorghum 60x30 (135 - 160days) 	<ul style="list-style-type: none"> Pigeon pea 4-6 Soybean 10-15

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean: JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525 /ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/kg seed (Rs.71/ ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloral in @1kg ai/ha/ (or) pre emergence Pendimet halin@1kg ai/ha. (Rs.1397/ha)	<p>Helicoverpa:</p> <ul style="list-style-type: none"> Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha) 	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 • (135 x 160days) 	<ul style="list-style-type: none"> • Pigeonpea 4-6 • Soybean 10-15

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean: JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525 /ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/ kg seed (Rs.71/ ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing or soil mulch (Additional two hoeings (Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin @1kg ai/ha. (Rs.1397/ ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 110-150d) 60x30 (135 x 160days) 	<ul style="list-style-type: none"> Pigeonpea 3-5 Soybean 8-10

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/kg seed (Rs.71/ ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 110-150days) 60x30 (135 x 160days) 	<ul style="list-style-type: none"> Pigeonpea 2-3 Soybean 6-7

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Pigeonpea: C-11 and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/kg seed (Rs.71/ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:50:00 NPK kg/ha (Rs.1964) 	<ul style="list-style-type: none"> Two hand weeding (Rs.3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimet halin@1kg ai/ha. (Rs.1397/ha) 	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 (110-150days) 60x30 (135-160days) 	<ul style="list-style-type: none"> Pigeonpea 4-6 Soybean 10-12

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (30-40 DAS)

1	2	3	4	5	6	7	8	9	10
<p>Pigeonpea : C-11 and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25</p>	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<p><i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carbend-azim 2g/kg seed (Rs.71/ ha)</p>	<p>12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)</p>	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeings Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	<p>Two hand weeding (Rs3600/ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethal in@1kg ai/ha. (Rs.1397/ha)</p>	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs. 680/ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) • 45x20 110-150d) • 60x30 • (135 x 160days) 	<ul style="list-style-type: none"> • Pigeonpea 4-6 • Soybean 10-15

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeon-pea : C-11and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) Frequent hoeing for soil mulch (Additional two hoeing (Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)	<p>Helicoverpa:</p> <p>Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> Suitable for intercropping with cotton, soybean, sorghum 30 x 10cm (TAT-10) 45x20 (110-150days) 60x30 (135-160days) 	<ul style="list-style-type: none"> Pigeonpea 3-5 Soybean 7-9

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeon pea : C-11and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering Rs.1525/ha 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/kg seed (Rs.71/ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate d at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@ 1kg ai/ha. (Rs.1397/ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10cm (TAT-10) 45x20 (110-150days) • 60x30 (135-160days) 	<ul style="list-style-type: none"> • Pigeonpea 2-3 • Soybean 6-7

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98- 21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625 /ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carbendazim 2g/ kg seed (Rs. 71/ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs.3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin @ 1kg ai/ha. (Rs.1397/ ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> • Suitable for intercropping with cotton , soybean and sorghum 30x10 (TAT-10) • 45x20 (110-150days) • 60x30 (135-160days) 	<ul style="list-style-type: none"> • Pigeonpea 3-5 • Soybean 5-6

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage ((30-40 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean :JS-335, TAMS-38, TAMS-98- 21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carben-dazim 2g/kg seed (Rs.71/ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Reduce plant population by 20% (Rs.480/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre-emergence Pendimethalin @ 1kg ai/ha. (Rs.1397/ ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean and sorghum • 30 x 10cm • (TAT-10) • 45x20 cm (110-150days) • 60x30 cm (135-160days) 	<ul style="list-style-type: none"> • Pigeonpea 3-5 • Soybean 5-6

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (65-80 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeon-pea : C-11and ICPL-87119 Soybean :JS- 335, TAMS- 38, TAMS- 98-21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525 /ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carbendazi m 2g/ kg seed (Rs.71/ha)	<ul style="list-style-type: none"> • 12-15 (for 160-200 and 135-160 days duration • 30-40 (for 110-150 days duration 	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ha) • Frequent hoeing for soil mulch (Additional two hoeing Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:50:00 NPK kg/ha (Rs.1964) 	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimethalin@1kg ai/ha. (Rs.1397/ ha)	<p>Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthoate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)</p>	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, sorghum • 30 x 10 cm (TAT-10) • 45x20 cm 110-150days) 60x30 cm (135-60days) 	<ul style="list-style-type: none"> • Pigeon pea 3-4 • Soybean 4-5

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain filling stage (90-135 DAS)

1	2	3	4	5	6	7	8	9	10
Pigeonpea : C-11and ICPL-87119 Soybean : JS-335, TAMS-38, TAMS-98- 21 Sorghum: CSH-14, CSH-17, CSH-9, CSH-16, CSH-18 & CSH-25	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset (Rs.625/ha) • After receiving rainfall, one harrowing with tractor drawn blade hoe • Sowing with bullock drawn marker tying sarata and seed covering (Rs.1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + thiram @ 3g or + Carbendazi m 2g/ kg seed (Rs.71/ha)	12-15 (for 160-200 and 135-160 days duration 30-40 (for 110-150 days duration)	<ul style="list-style-type: none"> • Four hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.1600/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope on the tyne of hoe (Rs.400/ ha) 	FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) 25:50:00 NPK kg/ha (Rs.1964)	Two hand weeding (Rs3600/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) pre emergence Pendimet halin@1kg ai/ha. (Rs.1397/ha)	Helicoverpa: Endosulfan 35% 20ml (Endosulfan cost Rs.680/ ha) (or) Quinolphos 25% 16ml (Quinolphos cost Rs.760/ha) (or) Fenthodate 50% 14ml (or) Foselon 35% 20ml Chloropyriphos 20% 25ml in 10lit. water (Chloropyriphos cost Rs.658/ha)	<ul style="list-style-type: none"> • Suitable for intercropping with cotton, soybean, and sorghum • 30 x 10cm (TAT-10) • 45x20 cm (110-150days) • 60x30 cm (135- 160days) 	<ul style="list-style-type: none"> • Pigeonpea 2-3 • Soybean 3-4

*Recommended for intercropping & # Depending on the type of variety (early, medium and late)

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute of Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Greengram*

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	<i>In-situ/ex-situ</i> moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802 (61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667ha)	One hand weed-ing 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30cm X 10cm	7-10

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (15-20 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802(61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30cm X 10cm	7-10

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (30-35 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802(61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30cm X 10cm	5-8

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (45-50 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802(61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30x 10cm	5-8

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802 (61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30x10cm	7-10

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (15-20 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802(61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + <i>PSB</i> 25g /kg seed + Thiram @ 3g (or) + Carben- dazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30 X 10cm	7-10

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (30-35 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days) TARM-2, TARM-18 (68-70 days), PKV Mug 8802 (61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30x10cm	5-8

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (45-50 DAS)

1	2	3	4	5	6	7	8	9	10
Kopergaon (60-65 days), TARM-2, TARM-18 (68-70 days), PKV Mug 8802 (61-63 days) and PKV greengold (64-72 days),	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weed-ing 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30x 10cm	3-5

*Sowing of greengram is not recommended under 30 days delay situation

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute of Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Blackgram*

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spa-cing 30X10 cm	10-12

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (15-20 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + <i>PSB</i> 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Preplant incorporation Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30X10 cm	10-12

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (30-35 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carben-dazim 2g/kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weeding 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloral in @1kg ai/ha/ (or) Pre emergence Pendimet halin @1kg ai/ha (Rs.1397/ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30 x 10cm	8-10

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (45-50 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + <i>PSB</i> 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30x10cm	5-8

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + <i>PSB</i> 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30X10 cm	10-12

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (15-20 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667 /ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan @35% EC 20ml (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @20kg/ha	Spacing 30X10 cm	10-12

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (30-35 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha). 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan 35% EC @ 20ml in 10 l (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @ 20kg/ha	Spacing 30X10 cm	8-10

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain filling stage (45-50 DAS)

1	2	3	4	5	6	7	8	9	10
T-9 (65-70 days), TAU-1 (68-72 days), TAU-2 (65-70 days) and PKV Udid-15 (65-72days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade hoe • Sowing by tying the sarata behind the bullock drawn marker and seed covering with the bullock drawn planker (Rs. 1525/ha) 	<i>Rhizobium</i> + PSB 25g /kg seed + Thiram @ 3g (or) + Carbendazim 2g/ kg seed (Rs.71/ha)	12-15	One hoeing with bullock drawn hoe at 15 to 20 days DAS (Rs.400/ha)	20:40:00 NPK kg/ha as basal (Rs.1667/ ha)	One hand weeding 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Aphids : Endosulfan 35% EC @ 20ml in 10 l (one spraying Rs.680/ha) (Or) Endosulfan 4% dust @ 20kg/ha	Spacing 30X10 cm	5-8

*The crop is grown as an intercrop if the onset of monsoon is delayed by more than 30 days

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute of Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Sesame

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120 days)	<ul style="list-style-type: none"> 2-3summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> Thiram Carben-dazim or Brassicol @ 3 g/kg of seed Trichoderma @ 4 g/kg seed (Rs.11/ ha) 	1.5 -2.0	Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200)	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:25:00 kg NPK /ha (Rs.1374/ha) For AKT-64 variety, fertilizer dose 40:25:0kg NPK/ha should be applied (Rs.1560/ha) Half N and full P as basal dose. Remaining half N after 30DAS 	Two hand weeding at 20 -25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs.1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30 cm row to row spacing	5-9

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative stage (20-25 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120days)	<ul style="list-style-type: none"> • 2-3 summer harrow-ing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<ul style="list-style-type: none"> • Thiram Carbendazim or • Brassicol @ 3g/kg of seed • Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> • Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800- Rs.1200) • Reduce plant population by 20% (Rs.480) • Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • 25:25:00 kg NPK/ha.. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS • Apply top dressing only after receipt of rains. 	Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer:</p> <p>Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or)</p> <p>Fenthion 50% 10ml (Or)</p> <p>Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or)</p> <p>Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha)</p> <p>Powdery mildew:</p> <p>Sulphur 300 mesh 20kg/ha (or)</p> <p>Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	5-7

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering stage (35-40 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120days)	<ul style="list-style-type: none"> 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) After receiving 50-75mm rainfall one harrow with tractor drawn blade harrow Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> Thiram Carbendazim or Brassicol @ 3g/kg of seed Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-1200) Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800 /ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) 25:25:00 kg NPK/ha. (Rs.1374/ha) For AKT-64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560/ha) Half N and full P as basal dose. Remaining half N after 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	4-6

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (60-65 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days), N-8, (Semi Rabi) (120days)	<ul style="list-style-type: none"> • 2-3summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<ul style="list-style-type: none"> • Thiram Carbendazim or • Brassicol @ 3g/kg of seed • Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> • Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800- Rs.1200) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 25:25:00 kg NPK /ha.. (Rs.1374 /ha) • For AKT-64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560 /ha) • Half N and full P as basal dose. Remaining half N after 30DAS 	Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	2-4

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120days)	<ul style="list-style-type: none"> • 2-3 summer harro-wing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harro-wing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> •Thiram Carbendazim or •Brassicol @ 3g/kg of seed •Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0.	Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200)	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 25:25:00 kg NPK /ha. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25:0 kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS 	<ul style="list-style-type: none"> • Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) • Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @ 1kg ai/ha (Rs.1397/ ha) 	<p>Jassid, leaf roller and capsule borer:</p> <p>Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha)</p> <p>(or)</p> <p>Fenthion 50% 10ml (Or)</p> <p>Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or)</p> <p>Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha)</p> <p>Powdery mildew:</p> <p>Sulphur 300 mesh 20kg/ha (or)</p> <p>Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	5-7

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative stage (20-25 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days), N-8 (Semi Rabi) (120days)	<ul style="list-style-type: none"> 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> Thiram Carbendazim or Brassicol @ 3g/kg of seed Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200) Reduce plant population by 20% (Rs.480) Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) 25:25:00 kg NPK/ha. (Rs.1374/ha) For AKT - 64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560/ha) Half N and full P as basal dose. Remaining half N after 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer:</p> <p>Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha)</p> <p>Powdery mildew:</p> <p>Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	5-7

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering stage (35-40 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days), N-8 (Semi rabi) (120 days)	<ul style="list-style-type: none"> • 2-3summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> •Thiram Carbendazim or •Brassicol @ 3g/kg of seed •Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> • Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200) • Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:25:00 kg NPK /ha.. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS • Apply top dressing only after receipt of rains. 	Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	4-6

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain development stage (60-65 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days), N-8 (Semi Rabi) (120 days)	<ul style="list-style-type: none"> • 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<ul style="list-style-type: none"> • Thiram Carbendazim or • Brassicol @ 3g/kg of seed • Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200)	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480 /ha) • 25:25:00 kg NPK /ha. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25: 0 kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS 	Two hand weeding at 20 -25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @ 1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	2-4

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120 days)	<ul style="list-style-type: none"> • 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harrow with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> • Thiram Carbendazim or • Brassicol @ 3g/kg of seed • Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200)	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480 /ha) • 25:25:00 kg NPK /ha. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25:0kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS 	Two hand weeding at 20 -25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Jassid, leaf roller and capsule borer: Endosulfan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)</p>	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	5-7

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative stage (20-25 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120 days)	<ul style="list-style-type: none"> • 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) • After receiving 50-75mm rainfall one harro-wing with tractor drawn blade harrow • Sowing with bullock drawn seed drill and seed covering (Rs.1525/ha) 	<ul style="list-style-type: none"> • Thiram Carbendazim or • Brassicol @ 3g/kg of seed • Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	<ul style="list-style-type: none"> • Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200) • Reduce plant population by 20% (Rs.480) • Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • 25:25:00 kg NPK /ha.. (Rs.1374/ha) • For AKT-64 variety, fertilizer dose 40:25:0 kg NPK/ha should be applied (Rs.1560/ha) • Half N and full P as basal dose. Remaining half N after 30DAS • Apply top dressing only after receipt of rains. 	<ul style="list-style-type: none"> • Two hand weeding at 20 -25days interval from sowing (Rs.3600/ha) • Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha) 	<ul style="list-style-type: none"> • Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) • Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha) 	<ul style="list-style-type: none"> • Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing 	5-7

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (35-40 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120 days)	<ul style="list-style-type: none"> 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) After receiving 50-75mm rainfall one harrowing with tractor drawn blade harrow Sowing with bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<ul style="list-style-type: none"> Thiram Carbendazim or Brassicol @ 3g/kg of seed Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5-2.0	<ul style="list-style-type: none"> Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-1200) Frequent hoeing with bullock drawn hoe for soil mulch (Additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:25:00 kg NPK /ha.. (Rs.1374/ha) For AKT-64 variety, fertilizer dose 40:25:0kg NPK/ha should be applied (Rs.1560/ha) Half N and full P as basal dose. Remaining half N after 30DAS Apply top dressing only after receipt of rains. 	<ul style="list-style-type: none"> Two hand weeding at 20 - 25days interval from sowing (Rs.3600/ha) Pre emergence Fluchoralin @1kg ai/ha/ or Pendimethalin @1kg ai/ha (Rs.1397/ ha) 	<ul style="list-style-type: none"> Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha) 	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	4-6

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain development stage (60-65 DAS)

1	2	3	4	5	6	7	8	9	10
AKT-64, (Kharif), (85-90 days) N-8, (Semi Rabi) (120 days)	<ul style="list-style-type: none"> 2-3 summer harrowing with tractor drawn cultivator (Rs.1250-1875/ha) After receiving 50-75mm rainfall one harrow-wing with tractor drawn blade harrow Sowing with bullock drawn seed drill and seed covering (Rs.1525 /ha) 	<ul style="list-style-type: none"> Thiram Carbendazi m or Brassicol @ 3g/kg of seed Trichoderma @ 4g/kg seed (Rs.11/ha) 	1.5 -2.0	Two or three hoeing with bullock drawn hoe at 20-25 days interval from sowing (Rs.800-Rs.1200)	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) 25:25:00 kg NPK/ha. (Rs.1374/ha) For AKT-64 variety, fertilizer dose 40:25:0 kg NPK/ha should be applied (Rs.1560/ha) Half N and full P as basal dose. Remaining half N after 30DAS 	Two hand weeding at 20 -25days interval from sowing (Rs.3600/ha) Pre emergence Fluchloralin @1kg ai/ha/ or Pendimethalin @ 1kg ai/ha (Rs.1397/ ha)	Jassid, leaf roller and capsule borer: Endlosufan 35% 14ml (Endosulfan for one spraying Rs.620/ha) (or) Fenthion 50% 10ml (Or) Quinolphos 25% 20ml (Quinolphos for one spraying Rs.755/ha) (Or) Carbaryl 50% WP 40g per 10lit water (Carbaryl for one spraying Rs1288/ha) Powdery mildew: Sulphur 300 mesh 20kg/ha (or) Sulphur WP 25g per 10lit water (Sulphur for one spraying Rs.363/ha)	Can be taken as intercrop with greengram (3:3) soybean (2:1) Cotton (3:1) 30cm row to row spacing	2-4

Source of Seed: 1) University's Agricultural Research Stations
4) Directorate of Oilseeds Research, Hyderabad

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Sunflower

Condition: Normal onset (24th SMW)

Sub-condition: No stress

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	<i>In-situ/ex-situ</i> moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or +Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) or 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400 /ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	<ul style="list-style-type: none"> Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha) 	<ul style="list-style-type: none"> Sucking pests: Jassid-White fly Imidachlopid 70 WS, 5g/kg before sowing as seed treatment (Imidachlopid Rs.76) (or) Imidachlopid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10% dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for inter-cropping with groundnut (6:2) Pigeon-pea (1:2) Spacing 45 or 60 cm x 30cm For morden variety spacing 45cm x22.5 cm. 	12-14

Condition: Normal onset (24th SMW)

Sub-condition: Initial stress at vegetative growth (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) + Carbendazim 2g and Trichoderma 4g/kg seed (Trichoderma Rs.22/ha)	8-10 (drilling) 5-6 (dibbling)	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing for soil mulch (additional 2 hoeing cost Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10% dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeon-pea (1:2) Spacing 45 x30cm 	12-14

Condition: Normal onset (24th SMW)

Sub-condition: Mid season stress at flowering (40-50 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625 /ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400 /ha) Frequent hoeing for soil mulch (additional 2 hoeing Rs.800/ha) One protective irrigation of 5cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910 /ha) PKVSF-9 60:60:00 (Rs.2625 /ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867 /ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	Sucking pests: <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	9-11

Condition: Normal onset (24th SMW)

Sub-condition: Terminal stress at grain filling stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker& tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> • 8-10 (drilling) • 5-6 (dibbling) 	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800 /ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs.400/ha) • One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • Morden 40:40:00 (Rs.1910/ha) • PKVSF-9 60:60:00 (Rs.2625/ha) • PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> • Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) • Imidachloprid 200 S.L. 5ml (or) • Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS • Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) • Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> • Suitable for intercropping with groundnut (6:2) • Pigeonpea (1:2) • Spacing 45 x30cm 	7-8

Condition: 15 days delay (26th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625 /ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ ha) 	Thiram @ 3g (Rs.24/ha) or + Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	12-14

Condition: 15 days delay (26th SMW)

Sub-condition: Initial stress at vegetative growth (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625 /ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying sarta and seed covering with bullock drawn planker (Rs.1525/ ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and Trichoderma 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400/ ha) Reduce plant population by 20% (Rs.480/ ha) Frequent hoeing for soil mulch (additional 2 hoeings Rs.800/ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10% dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	12-14

Condition: 15 days delay (26th SMW)

Sub-condition: Mid season stress at flowering (40-50 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625 /ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400/ha) Frequent hoeing for soil mulch (additional 2 hoeing Rs.800/ha) One protective irrigation of 5 cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910 /ha) PKVSF-9 60:60:00 (Rs.2625 /ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867 /ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests: Jassid-White fly</p> <p>Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or)</p> <ul style="list-style-type: none"> Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	9-11

Condition: 15 days delay (26th SMW)

Sub-condition: Terminal stress at grain development stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or+ Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> • 8-10 (drilling) • 5-6 (dibbling) 	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tye of hoe at 30-35 DAS. (Rs.400/ha) • One protective irrigation of 5cm. 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) • Morden 40:40:00 (Rs.1910/ha) • PKVSF-9 60:60:00 (Rs.2625/ha) • PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> • Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) • Imidachloprid 200 S.L. 5ml (or) • Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS • Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) • Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> • Suitable for intercropping with groundnut (6:2) • Pigeonpea (1:2) • Spacing 45 x30cm 	7-8

Condition: 30 days delay (28th SMW)

Sub-condition: No stress

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) • After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow • Sowing with bullock drawn marker and tying sarta and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (<i>Trichoderma</i> Rs.22/ha)	<ul style="list-style-type: none"> • 8-10 (drilling) • 5-6 (dibbling) 	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) • Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs.400/ha) 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs.10480/ha) • Morden 40:40:00 (Rs.1910/ha) • PKVSF-9 60:60:00 (Rs.2625/ha) • PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> • Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) • Imidachloprid 200 S.L. 5ml (or) • Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS • Tobacco leaf eating caterpillar, semi looper, helicoverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) • Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> • Suitable for intercropping with groundnut (6:2) • Pigeonpea (1:2) • Spacing 45 x30cm 	9-11

Condition: 30 days delay (28th SMW)

Sub-condition: Initial stress at vegetative growth (20-30 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ha) Opening of Furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs.400/ha) Reduce plant population by 20% (Rs.480/ha) Frequent hoeing for soil mulch (additional 2 hoeing Rs.800 /ha) 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910 /ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867 /ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeon-pea (1:2) Spacing 45 x30cm 	9-11

Condition: 30 days delay (28th SMW)

Sub-condition: Mid season stress at flowering stage (40-50 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525 /ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800/ ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs.400 /ha) Frequent hoeing for soil mulch (additional 2 hoeing Rs.800/ha) One protective irrigation of 5cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS Apply top dressing only after receipt of rains. 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10% dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	6-7

Condition: 30 days delay (28th SMW)

Sub-condition: Terminal stress at grain development stage (60-70 DAS)

1	2	3	4	5	6	7	8	9	10
PKVSF-9 (80-85days), Morden (75-85 days), TAS-82 (90-95 days), PKVSH-27 Hybrid (80-85 days) and KBSH-1 Hybrid (90-95 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn cultivator before onset of monsoon (Rs.625/ha) After receiving 50-75mm rainfall, one harrowing with tractor drawn blade harrow Sowing with bullock drawn marker and tying <i>sarta</i> and seed covering with bullock drawn planker (Rs.1525/ha) 	Thiram @ 3g (Rs.24/ha) or Carbendazim 2g and <i>Trichoderma</i> 4g/kg seed (Trichoderma Rs.22/ha)	<ul style="list-style-type: none"> 8-10 (drilling) 5-6 (dibbling) 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15 to 20 days interval from 15 DAS (Rs.800 /ha) Opening of furrow with bullock drawn hoe at last hoeing by tying rope to the tyne of hoe at 30-35 DAS. (Rs. 400 /ha) One protective irrigation of 5cm. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporated at the time of pre sowing tillage (Rs. 10480/ha) Morden 40:40:00 (Rs.1910/ha) PKVSF-9 60:60:00 (Rs.2625/ha) PKVSH-27 80:60:00 NPK kg/ha (Rs.2867/ha) Half N and full P as basal dose and remaining half N as top dressing at 30DAS 	Two hand weeding at 20-25 days interval after sowing (Rs. 3600/ha) Pre plant incorporation of Fluchloralin @1kg ai/ha/ (or) Preemergence Pendimethalin @1kg ai/ha (Rs.1397/ha)	<p>Sucking pests:</p> <ul style="list-style-type: none"> Jassid-White fly Imidachloprid 70 WS, 5g/kg before sowing as seed treatment (Imidachloprid Rs.76) (or) Imidachloprid 200 S.L. 5ml (or) Azadiractin 1500 ppm 20ml in 10lit water after 15-30DAS Tobacco leaf eating caterpillar, semi looper, helioverpa: Endosulfan @35% 14ml (Endosulfan Rs.620) (or) Foselon 35% 14ml in 10lit water (or) Carbaryl 10%dust @20kg/ha 	<ul style="list-style-type: none"> Suitable for intercropping with groundnut (6:2) Pigeonpea (1:2) Spacing 45 x30cm 	4-5

Source of Seed: 1) University's Agricultural Research Stations
4) Directorate of Oilseeds Research, Hyderabad

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Safflower

Condition: Normal withdrawal of monsoon (15 September)

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	In-situ/ex-situ moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Improved: AKS-207 (125-130 days), Bhīma (130-135 days), NARI-6 (135-137 days), Hybrid: NH-1 (135-140 days)	<ul style="list-style-type: none"> 1-2 harrowing with tractor drawn cultivator and blade hoe before sowing (Cost Rs.1250/ha) Sowing done by bullock drawn seed drill (Rs.750/ha) 	<ul style="list-style-type: none"> Thirum or Captan 3g/kg Trichoderma 4g/kg Azotobacter + 25g /kg +PSB (Rs.108/ha) 	<ul style="list-style-type: none"> 10-12 for improved varieties 7.5 for hybrids 	<ul style="list-style-type: none"> Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Cost Rs.800/ha) One supplementary irrigation of 5 cm at 50DAS. 	<ul style="list-style-type: none"> FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs.10480/ha) 25:25:00 NPK kg/ha (Rs.1374/ha) 	One hand weeding at 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloralin @1kg ai/ha (Rs.1397/ha)	Aphids: Fenthion 50% 10ml (or) Endosulfan 35% 14ml (one spraying Rs.620/ha) (or) Qunolphos 25% 20ml (or) Dimethioate 30% 10ml (for one spraying Rs.578/ha) (or) Aciphate 75% WP 4g (for one spraying Rs.571/ha) (or) Malathion 50% 20ml in 10lit water(for one spraying Rs.685/ha)	45cm row to row Intercropping with safflower + chickpea (6:3) or safflower + linseed (3:3)	14-20

Condition: 15 days early withdrawal of monsoon

1	2	3	4	5	6	7	8	9	10
Improved: AKS-207 (125-130 days), Bhīma (130-135 days), NARI-6 (135-137 days), Hybrid: NH-1 (135-140 days)	<ul style="list-style-type: none"> • 1-2 harrowing with tractor drawn cultivator and blade hoe before sowing (Cost Rs.1250/ha) • Sowing done by bullock drawn seed drill (Rs.750/ha) 	<ul style="list-style-type: none"> • Thirum or Captan 3g/kg • <i>Trichoderma</i> 4g/kg • <i>Azotobacter</i> + 25g/kg +PSB (Rs.108/ha) 	<ul style="list-style-type: none"> • 10-12 for improved varieties • 7.5 for hybrids 	Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Cost Rs.800/ha) One Supplementary irrigation of 5 cm at 50DAS	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs. 10480/ha) • 25:25:00 NPK kg/ha (Rs.1374/ha) 	One hand weeding at 20-25 DAS (Rs.1800 /ha) Pre plant incorporation Fluchlora-lin @1kg ai/ha (Rs.1397/ha)	Aphids: Fenthion 50% 10ml (or) Endosulfan 35% 14ml (one spraying Rs.620/ha) (or) Qunolphos 25% 20ml (or) Dimethioate 30% 10ml (for one spraying Rs578/ha) (or) Aciphate 75% WP 4g (for one spraying Rs.571/ha) (or) Malathion 50% 20ml in 10lit water(for one spraying Rs.685/ha)	45cm row to row Intercropping with safflower + chickpea (6:3) or safflower + linseed (3:3)	10-15

Condition: 15 days late withdrawal of monsoon

1	2	3	4	5	6	7	8	9	10
Improved: AKS-207 (125-130 days), Bhima (130-135days), NARI-6 (135-137days), Hybrid: NH-1 (135-140 days)	<ul style="list-style-type: none"> • 1-2 harrowing with tractor drawn cultivator and blade hoe before sowing (Cost Rs.1250 /ha) • Sowing done by bullock drawn seed drill (Rs.750/ha) 	<ul style="list-style-type: none"> • Thirum or Captan 3g/kg • <i>Trichoderma</i> 4g/kg • <i>Azaobacter</i> + 25g /kg + PSB (Rs.108/ha) 	<ul style="list-style-type: none"> • 10-12 for improved varieties • 7.5 for hybrids 	<ul style="list-style-type: none"> • Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Cost Rs.800/ha) • One Supplementary irrigation of 5 cm at 50DAS 	<ul style="list-style-type: none"> • FYM @ 5t/ha incorporate at the time of pre sowing tillage (Rs.10480/ha) • 25:25:00 NPK kg/ha (Rs.1374 /ha) 	One hand weeding at 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchlora-lin @1kg ai/ha (Rs.1397/ha)	Aphids: Fenthion 50% 10ml (or) Endosulfan 35% 14ml (one spraying Rs.620/ha) (or) Qunolphos 25% 20ml (or) Dimethioate 30% 10ml (for one spraying Rs.578/ha) (or) Aciphate 75% WP 4g (for one spraying Rs.571/ha) (or) Malathion 50% 20ml in 10lit water(for one spraying Rs.685/ha)	45cm row to row Intercropping with safflower + chickpea (6:3) or safflower + linseed (3:3)	14-20

Source of Seed: 1) University's Agricultural Research Stations
4) Directorate of Oilseeds Research, Hyderabad

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation

Crop: Chickpea

Condition: Normal withdrawal of monsoon (15 September)

Varieties	Management practices								
	Land preparation and tillage	Seed treatment	Seed rate (kg/ha)	<i>In-situ/ex-situ</i> moisture conservation	Nutrient management	Weed management	Pest & disease management	Any other	Expected yield (q/ha)
1	2	3	4	5	6	7	8	9	10
Jaki-9218, Saki-9516, Chafa-816, ICCV-10 (105-110 days)	<ul style="list-style-type: none"> One harrowing with tractor drawn harrow before sowing (Rs.625/ha) Sowing by bullock drawn Seed drill (Tiffan) or Tractor drawn Seed cum fertilizer drill (Rs.750/ha) 	<ul style="list-style-type: none"> <i>Trichoderma</i> 4g/kg <i>Rhizobium</i> + 25g /kg +PSB (25g) Thiram (or) Captan 3g/kg seed (Rs.239/ha) 	60-75	Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Rs.800/ha) Supplementary irrigation of 5cm with sprinkler at flowering and grain development.	20:40:00 NPK kg/ha as basal dose (Rs.1667/ha)	One hand weeding at 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @ 1kg ai/ha (Rs.1397/ha).	Helicoverpa: Endosulfan 35% 20ml (Rs.680/ha) (or) Formathion 25% 20ml (or) Quinolphos 25% 20ml (Rs.755/ha) (or) Foselon 35% 14ml in 10lit water	30 x 10cm spacing	12-15

Condition: 15 days early withdrawal of monsoon

1	2	3	4	5	6	7	8	9	10
Jaki-9218, Saki-9516, Chafa-816, ICCV-10 105-110 days	<ul style="list-style-type: none"> • One harrowing with tractor drawn harrow before sowing (Rs.625/ha) • Sowing by bullock drawn Seed drill (Tiffan) or Tractor drawn Seed cum fertilizer drill (Rs.750/ha) 	<ul style="list-style-type: none"> • <i>Trichoderma</i> 4g/kg • <i>Rhizobium</i> + 25g/kg +PSB (25g) • Thiram (or) Captan 3g/kg seed (Rs.239/ha) 	60-75	Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Rs.800/ha) Supplementary irrigation of 5cm with sprinkler at flowering and grain development.	20:40:00 NPK kg/ha as basal dose (Rs.1667/ha)	One hand weeding at 20-25 DAS (Rs.1800/ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @ 1kg ai/ha (Rs.1397/ha).	Helicoverpa: Endosulfan 35% 20ml (Rs.680/ha) (or) Formathion 25% 20ml (or) Quinolphos 25% 20ml (Rs.755/ha) (or) Foselon 35% 14ml in 10lit water	30 x 10cm spacing	8-10

Condition: 15 days late withdrawal of monsoon

1	2	3	4	5	6	7	8	9	10
Jaki-9218, Saki-9516, Chafa-816, ICCV-10 (105-110 days)	<ul style="list-style-type: none"> • One harrowing with tractor drawn harrow before sowing (Rs.625/ha) • Sowing by bullock drawn Seed drill (Tiffan) or Tractor drawn Seed cum fertilizer drill (Rs.750/ha) 	<ul style="list-style-type: none"> • <i>Trichoderma</i> 4g/kg • <i>Rhizobium</i> + 25g /kg +PSB (25g) • Thiram (or) Captan 3g/kg seed (Rs.239/ha) 	60-75	Two hoeing with bullock drawn hoe at 15-20 days interval after sowing. (Rs.800/ha) Supplementary irrigation of 5cm with sprinkler at flowering and grain development.	20:40:00 NPK kg/ha as basal dose (Rs.1667/ha)	One hand weeding at 20-25 DAS (Rs.1800/ ha) Pre plant incorporation Fluchloralin @1kg ai/ha/ (or) Pre emergence Pendimethalin @ 1kg ai/ha (Rs.1397/ha)	Helicoverpa: Endosulfan 35% 20ml (Rs.680/ha) (or) Formathion 25% 20ml (or) Quinolphos 25% 20ml (Rs.755/ha) (or) Foselon 35% 14ml in 10lit water	30 x 10cm spacing	12-15

Source of Seed: 1) University's Agricultural Research Stations
4) Indian Institute of Pulses Research, Kanpur

2) Maharashtra State Seed Corporation Ltd. (MSSC)
5) Private Companies

3) National Seed Corporation