









## DIRECTOR OF RESEARCH

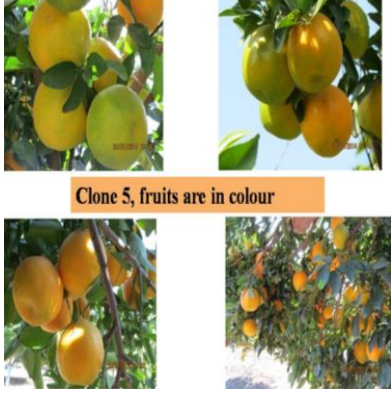


DR. PANJABRAO DESHMUKH KRISHI VIDYAPEETH, AKOLA

Research Recommendations released during 2016 - 2017





(Approved by Joint Agresco - 2017)







Varietal Improvement		
1	<p><b>Sorgum Wani 103 (PDKV Hurda Kartiki)</b> Yield -45 qt/ha (Green Hurda) Green fodder Yield—200qt/ha Duration -90 days Medium duration Non shattering &amp; Non lodging</p>	
2	<p><b>Gram AKG-1109(PDKV-Kanchan)</b></p> <ul style="list-style-type: none"><li>➤ Yield-18-20qt/ha</li><li>➤ Grain size Medium bold</li><li>➤ Duration 105-110 days</li><li>➤ Suitable for irrigated condition</li></ul>	
3	<p><b>Paddy SKL- 2-50-56-45-30-60 (Sakoli-9)</b></p> <ul style="list-style-type: none"><li>✓ Midlate duration (130-135 days)</li><li>✓ Medium slender grains with test weight 19.06 g.</li><li>✓ High head rice recovery (&gt; 64%), good cooking quality and intermediate AC (22.55%)</li><li>✓ Promising culture to stem borer</li><li>✓ Average grain yield 3873 kg/ha</li></ul>	 SKL- 2-50-56-45-30-60
4	<p><b>Groundnut AK-335</b> High Seed Yielding: 22-24 qt/ha Oil yield -48 % Duration- 110-113 days Moderate resistance to major diseases (Tikka, Stem rot and Collar rot) Moderate resistance to major pests (Jassid, thrips and Aphids). uitable to grow in rabi-summer season for seed production purpose.</p>	




5	<p><b>Okra AKOV-107 (PDKV Pragati)</b></p> <ul style="list-style-type: none"> <li>➤ Morphological marker character of One sided red spot at the base of the petals (Inner side).</li> <li>➤ Yield-99 qt/ha</li> <li>➤ Duration-100-105 days</li> <li>➤ Resistant with Arka Anamika and Parbhani Kranti for Yellow Vein Mosaic Virus.</li> </ul>	
6	<p><b>Chilli AKC-406 (Hirkani)</b></p> <ul style="list-style-type: none"> <li>✓ Dark Green fruit colour at unripe stage.</li> <li>✓ Dark red fruit at ripe stage (Wet red chilli).</li> <li>✓ Yield- 48qt /ha.</li> <li>✓ It has moderate capsaicin content (330 mg/100 gm).</li> <li>✓ Good colour value (39040 CU) over check Jayanti (33550 CU).</li> </ul>	
7	<p><b>Gaillardia PDKV Roshani)</b></p> <ul style="list-style-type: none"> <li>✓ Attractive white colour flowers</li> <li>✓ Multi-petal flowers</li> <li>✓ Large size of flowers</li> <li>✓ Dwarf plant with more spread</li> <li>✓ High yielding variety</li> </ul>	
8	<p><b>Chrysanthemum Bijali supers</b></p> <ul style="list-style-type: none"> <li>✓ Attractive white colour flowers</li> <li>✓ Multi-petal flowers</li> <li>✓ Large size of flowers</li> <li>✓ Dwarf plant with more spread</li> <li>✓ High yielding variety</li> </ul>	

9	<p><b>Mandarin PDKV,Nagpur Santra( PDKV Mandarin-5)</b></p> <ul style="list-style-type: none"> <li>✓ Fruit yield: 27 t/ha</li> <li>✓ Fruit wt : Though yield is higher fruit wt is optimum which ranges 142 to 149 g</li> <li>✓ Juiciness : Fruits are juicy and recorded highest juice i.e. 50% which is approximately 3.5 % more compare to Nagpur mandarin</li> <li>✓ TSS and acidity blend : PDKV Mandarin fruits are well blend of TSS and acidity and recorded highest TSS acidity ratio i.e. 14</li> <li>✓ Fruit colour: Attractive apricot –orange colour</li> <li>✓ Fruit bearing : Fruit bearing habit inside canopy also Responds to bahar regulation</li> <li>✓ Growth: Comparatively spreading growth habit</li> </ul>	 <p style="text-align: center;">Clone 5, fruits are in colour</p>
10	<p><b>Acid Lime PDKV,Trupti (Akola lime-3)</b></p> <ul style="list-style-type: none"> <li>➤ The fruit : round to oblong, yellow at maturity</li> <li>➤ Fruits are large size weighing 59 to 60 g , with average 53.50 g wt of ambia bahar fruits</li> <li>➤ Fruit segments : 9-10 no</li> <li>➤ Peel character : Warty, adherence very strong.</li> <li>➤ Fruit peel : 0.28 cm , thick skin or thick rind</li> <li>➤ Highest peel percentage (22.25%)</li> <li>➤ Rag percentage : higher 28.73%</li> <li>➤ Pulp : light greenish yellow, texture coarse, comparatively moderate juicy (49.75%)</li> <li>➤ Flavor good, sour and highly acidic (8.55%)</li> <li>➤ Seed : 9-10 and highly poly embryonic.</li> <li>➤ Yield: 25 to 27 tones/ha</li> <li>➤ Recovery of Pickle: 67.50%</li> </ul>	
<b>Development of Impliments</b>		
1	<p><b>Small tractor operated inter row cultivator'</b></p> <p>It can be useful for small tractor (18.5 HP) It can be use for interculture operation for the crop spacing of 45 cm. with maintaining the depth of operation</p>	











<p>2</p>	<p><b>PDKV Chickpea pod stipper</b></p> <p>It is recommended to use PDKV green chickpea pod stripping machine (capacity- 11 kg/h) for green chickpea pod stripping.</p>	
<p>3</p>	<p><b>Manually Operated Seedling Transplanter'</b></p> <p>It is recommended to use manually operated seed ling transplanter for planting seedlings,Weight of transplanter is 5.8 Kg. Reduces the drudgery during transplanting</p>	
<p>4</p>	<p><b>Integrated PKV Mini Dal Mill'</b></p> <p>It is recommended to use Integrated PKV mini dal mill (3 HP) for green gram and black gram split pulses with husk, quality chickpea dehulling and for easiness in splitting, cleaning and grading of dehulledpigeonpea split grain besides milling of pulses.</p>	
<p>5</p>	<p><b>PDKV Green gram wet dehuller</b></p> <p>PDKV Wet type dehuller is recommended for dehulling of soaked green gram splits.</p>	

<b>Production technology</b>		
<b>Field Crop</b>		
1	For more yield and higher economic return of irrigated mustard GM- 3 sowing in the second fortnight of October (from 15 <sup>th</sup> to 25 <sup>th</sup> October ) at 45 cm X 15 cm geometry is recommended	
2	In medium deep black soil of Vidarbha for higher grain yield, good quality and improving soil fertility of mungbean application of potassium @ 20 kg ha <sup>-1</sup> along with recommended dose of 20 kg N and 40 kg P <sub>2</sub> O <sub>5</sub> ha <sup>-1</sup> is recommended	
3	In medium deep black soil of Vidarbha for higher grain yield, good quality and improving soil fertility of urdbean application of potassium @ 20 kg ha <sup>-1</sup> along with recommended dose of 20 kg N and 40 kg P <sub>2</sub> O <sub>5</sub> ha <sup>-1</sup> is recommended	
4	For obtaining higher pods yields and economic return from summer groundnut Spanish bunch variety TAG 24 sowing at plant spacing 20x10 cm in light-medium soil with fertilizer dose of 30:60:30 NPK Kg/ha is recommended for vidarbha region	
5	Sowing of Kharif sunflower on ridges and furrows with 60 x 30 cm spacing along with the application of 125 % RDF (100: 75: 37.5 NPK kg ha <sup>-1</sup> ) is recommended to maintain optimum moisture % in soil, to obtain higher seed and oil yield as well as to get maximum monetary returns.	
6	It is recommended that, for higher grain production and higher monetary returns, wheat should be fertilized with 150 kg N ha <sup>-1</sup> (in two equal split doses) along with 50 kg P <sub>2</sub> O <sub>5</sub> ha <sup>-1</sup> and 50 kg K <sub>2</sub> O ha <sup>-1</sup>	
7	In Eastern Vidarbha Zone of Maharashtra to get the highest grain yield , Gross monetary returns and net monetary returns from drilled rice, 75 kg seed rate/ha for coarse varieties and 50 kg seed rate/ha for fine varieties with application of 125: 62.5 : 62.5 kg NPK / ha is recommended	




8	<p>For obtaining higher system productivity and system profitability, sowing of non Bt. cotton + soybean (4:10)-safflower cropping sequence with tractor drawn seed drill and application of 45:55:30 kg ha<sup>-1</sup> NPK to the cotton + soybean (4:10) intercropping and 13.75:13.75:13.75 kg ha<sup>-1</sup> NPK to safflower is recommended for dryland condition of vidarbha region</p>																																														
9	<p>For more yield and higher economic return of irrigated mustard, irrigation at 0.8 IW/CPE ratio (with 50 mm irrigation depth, irrigation at 20, 40 and 55 DAS) is recommended.</p>																																														
10	<p>For obtaining higher yield and economic returns of linseed under utera cultivation in Eastern Vidarbha zone, seed treatment with Azatobactor and PSB ,two irrigation at an interval of 25 to 30 days after paddy harvest and 100% recommended dose of nitrogen (80 kg /ha) in two s splits (40 kg /ha each at 10 and 40 days after sowing) is recommended</p>																																														
11	<p>It is recommended to adopt. 1.00 ha. Integrated farming system model under irrigated condition for small and marginal farmers of western vidarbha region of Maharashtra .The IFS model includes the components of various crop and cropping system(0.70 ha) + fruits and vegetables(0.25 ha) +Goatary +Backyard poultry + Rabbit +organic kitchen garden + Compost (0.05 ha) + usefull plantation on field boundaries</p> <p>IFS model consists of following enterprises.</p>	<table border="1" data-bbox="261 1576 1493 2000"> <thead> <tr> <th colspan="2">Components</th> <th colspan="2"></th> <th>Area (ha)</th> </tr> </thead> <tbody> <tr> <td colspan="5">A) Cropping systems</td> </tr> <tr> <td></td> <td>Kharif</td> <td>Rabi</td> <td>Summer</td> <td></td> </tr> <tr> <td></td> <td>Cotton + Pigeon pea (6:2)</td> <td>-</td> <td>Sesame</td> <td>0.20</td> </tr> <tr> <td></td> <td>Soybean + Pigeon pea (5:1)</td> <td>-</td> <td>--</td> <td>0.15</td> </tr> <tr> <td>3</td> <td>Sorghum</td> <td>Wheat</td> <td>--</td> <td>0.15</td> </tr> <tr> <td>4</td> <td>Soybean</td> <td>Chickpea</td> <td>--</td> <td>0.15</td> </tr> <tr> <td>5</td> <td>Cowpea</td> <td>Fenugreek</td> <td>--</td> <td>0.05</td> </tr> <tr> <td colspan="2">B) Horticulture</td> <td colspan="2">Total (CS) = 0.70</td> <td></td> </tr> </tbody> </table>	Components				Area (ha)	A) Cropping systems						Kharif	Rabi	Summer			Cotton + Pigeon pea (6:2)	-	Sesame	0.20		Soybean + Pigeon pea (5:1)	-	--	0.15	3	Sorghum	Wheat	--	0.15	4	Soybean	Chickpea	--	0.15	5	Cowpea	Fenugreek	--	0.05	B) Horticulture		Total (CS) = 0.70		
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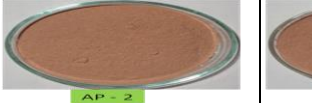

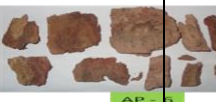


	6	Custard apple + Agasto + Drumstick	0.25
	C) Livestock		
	7	Goat, poultry and rabbit	0.05
	D	Others	
	8	Kitchen garden & compost	
	9	Boundary plantation of <i>Gliricidia sepium</i> & <i>Carissa carandas</i>	---
		Total	1.00
12	<p>In sorghum –Wheat crop sequence, for obtaining higher yields and monetary returns with improving and sustaining soil health, application of 75% RDF (90:45:45 kg N,P<sub>2</sub>O<sub>5</sub>,K<sub>2</sub>O /ha) or <i>leucana</i> lopping (4.60 t /ha) or wheat straw (6.25 t/ha) to kharif sorghum and 75 % RDF (90:45:45 kg N,P<sub>2</sub>O<sub>5</sub>,K<sub>2</sub>O/ha) through chemical fertilizers to wheat is recommended</p>		
13	<p>It is recommended that the post emergence application of Imazethapyr + Imazamox 70 WG @ 0.070 kg a.i./ha PoE 15 DAS was the most remunerative and effective herbicide for controlling the weed flora and getting higher yield and economic returns in soybean.</p>		
14	<p>In cotton pre emergence application of Pendimethalin 30 EC @ 1.00 kg a.i./ha followed by directed spray (by using protective shield) of non-selective herbicide Paraquat 24 SL @ 0.60 Kg a.i./ha at 45 days after sowing is recommended for controlling weeds with higher yield and monetary returns.</p>		
	<b>SSAC</b>		
15	<p>In salt affected soils of Purna valley in Vidarbha region, growing of dhaincha as a green manuring crop between two rows of cotton (1:1) and in situ burring after 40 DAS is recommended as an alternative to gypsum for improving soil health, soil carbon stock, higher productivity and monetary returns of cotton rotated with greengram – chickpea.</p>		




		
16	For improving soil health, productivity and monetary returns in cotton- soybean rotation, it is recommended to apply 25 % recommended N through Dhaincha loppings (2 t ha <sup>-1</sup> ) or Neem cake (3 q ha <sup>-1</sup> ) with remaining recommended dose of NPK of cotton (45: 28: 17 kg NPK ha <sup>-1</sup> ) along with RDF of Soybean through chemical fertilizers or Application of 100 % recommended N of cotton and soybean through FYM (11 t ha <sup>-1</sup> to cotton and 5 t ha <sup>-1</sup> to soybean)and remaining dose of P & K through phosphocompost to cotton (80 kg ha <sup>-1</sup> )and soybean(3.8 t ha <sup>-1</sup> ).	
17	In zinc deficient medium deep black soil of vidarbha for obtaining higher yield of chickpea, nutrient uptake, quality of grain and higher monetary returns besides improving soil fertility, soil application of zinc sulphate @ 20 kg ha <sup>-1</sup> or two foliar sprays of zinc sulphate @ 0.50 % during flowering and grain filling stage along with recommended dose of fertilizer (25:50:30 kg ha <sup>-1</sup> N, P <sub>2</sub> O <sub>5</sub> & K <sub>2</sub> O) is recommended.	
18	For chickpea crop, the levels of zinc 0.64 mg kg <sup>-1</sup> in soil and 23 mg kg <sup>-1</sup> in plant at grand growth stage are recommended as critical levels useful for zinc management in medium deep black swell shrink soils of vidarbha	
	<b>Horticulture</b>	







19	<p>Application of RDF (1200: 400:400) in five splits is recommended for higher yield and quality fruits of Ambia bahar in Nagpur mandarin</p> <p>The RDF splits are as follows</p> <table border="1" data-bbox="263 616 973 884"> <thead> <tr> <th>Month</th> <th>N (g/plant)</th> <th>P<sub>2</sub>O<sub>5</sub> (g/plant)</th> <th>K<sub>2</sub>O (g/plant)</th> </tr> </thead> <tbody> <tr> <td>January</td> <td>360</td> <td>160</td> <td>40</td> </tr> <tr> <td>March</td> <td>360</td> <td>140</td> <td>40</td> </tr> <tr> <td>May</td> <td>240</td> <td>100</td> <td>120</td> </tr> <tr> <td>July</td> <td>120</td> <td>0</td> <td>100</td> </tr> <tr> <td>September</td> <td>120</td> <td>0</td> <td>100</td> </tr> </tbody> </table>	Month	N (g/plant)	P <sub>2</sub> O <sub>5</sub> (g/plant)	K <sub>2</sub> O (g/plant)	January	360	160	40	March	360	140	40	May	240	100	120	July	120	0	100	September	120	0	100	
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20	<p>Sowing of Coriander (variety-ACR-1) during second fortnight of October with the moderate spacing of 45 x 45 cm is recommended for obtaining the higher seed yield and economic monetary returns.(GHAEADE</p>																									
21	<p>In Baby corn, to obtain the economical and higher yield with quality, it is recommended to sow in the month of September with spacing 45 x 15 cm with dibbling methods.</p>																									

<b>Medicinal and Aromatic Plants</b>			
22	<p>TLC method based on arjunetin as marker compound, precoated silica gel G F<sub>254</sub> plates and Toluene: Ethyl Acetate: Formic Acid (4 : 4.5 : 1.5) as solvent system is recommended for rapid identification of authentic <i>T arjuna</i> bark sample.</p>	 <p>AP - 1</p>	 <p>AP - 2</p>  <p>AP - 5</p>  <p>AP - 5</p>


<b>AICRP on Agro Forestry:</b>	
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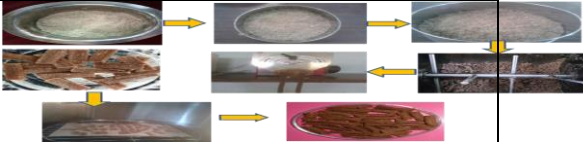

23	For maximum biomass production and higher monetary benefit cultivation of eucalyptus clone PDKV/ ITC/413 is recommended on shallow –medium soil under rainfed condition	
	<b>Plant Protection Entomology</b>	
24	For effective management of shoot fly in sorghum, seed treatment with imidacloprid 48 FS @ 12 ml/kg seed followed by quinalphos 25 % EC spray @ 20 ml/10 lit water, 15 days after sowing is recommended	
25	For management of shoot and fruit borer in brinjal, spraying of lambda- cyhalothrin 5 % EC @ 6 ml /10 lit water or chlorpyrifos 20 EC @ 25 ml/10 lit water or quinalphos 25%EC@ 20 ml/10 lit water is recommended	
26	For reduction in incidence of gall midge on paddy, in gall midge endemic areas, 15 days early planting (from 2 to 20 <sup>th</sup> July) than recommended normal planting is proposed for recommendation.	


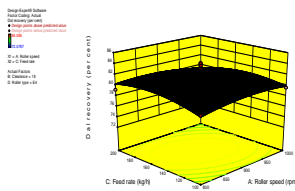


27	<p>Following module is recommended for Integrated Pest Management in non-Bt cotton.</p> <ol style="list-style-type: none"> <li>1 Seed treatment with thiamethoxam 30% FS @ 10 ml/kg seed.</li> <li>2 Planting one row of maize and cowpea alternate at one meter distance around the field as border crop and at every 9, 10 and 11<sup>th</sup> row of cotton alternate line of maize, cowpea and sataria, respectively.</li> <li>3 Application of 5% NSKE at 30 &amp; 45 DAS</li> <li>4 Use of pheromone traps @ 5 traps/ha each for monitoring of <i>E. vittella</i> and <i>H. armigera</i> at 45 DAS.</li> <li>5 Release of <i>Trichogramma chilonis</i> @ 2 lacs/ha (10 cards/ha) at 60 DAS.</li> <li>6 Application of <i>HaNPV</i> @ 500 LE/ha at 75 DAS.</li> <li>7 Installation of ‘ T ’ shaped bird perches @ 25/ha at 80 DAS.</li> <li>8 Installation of pheromone traps @ 5 traps/ha for monitoring of <i>P.gossypiella</i> at 85 DAS.</li> <li>9 Spraying profenophos 50 EC @ 20 ml/10 liters of water at 90 DAS.</li> <li>10 Use of yellow sticky traps @ 10 traps/ha for whitefly monitoring at 100 DAS.</li> <li>11 Spraying triazophos 40 EC @ 20 ml/10 liters of water at 105 DAS against whitefly and pink bollworm.</li> <li>12 Spraying lambda cyhalothrin 5 SC @ 10 ml/ 10 liters of water at 120 DAS DAS against pink bollworm..</li> </ol> <p>(Three University combined recommendation)</p>
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	<b>Plant Pathology</b>	
28	<p>It is recommended that to restrict post harvest storage diseases (<i>Penicillium</i> and <i>Geotrichum</i> fruit rot) of Nagpur mandarins, entire surface of the fruits should be exposed to UV-C of 13.4 Watt Ultra Violet output for 10 min. at 10 cm distance from UV-C source under protected conditions and precautions specified for use of UV-C, followed by application of 6% Vegetable wax. [One tube of UV-C can cover 100 average sized fruits in a batch]</p>	
29	<p>It is recommended that, to restrict post harvest storage diseases (<i>Penicillium</i> and <i>Geotrichum</i> fruit rot) of Nagpur mandarins, fruits should be dipped for 10 min. in 1.0% Sodium Hypochlorite solution prepared in distilled water followed by application of 6% vegetable wax</p>	
30	<p>Before sowing of Mungbean, seed treatment of Rhizobium AKMR-12-01 @ 25 g/kg seed as a bio-fertilizer should be applied for enhancing yield is recommended.</p>	
31	<p>Before sowing of Urdbean, seed treatment of Rhizobium WUR-12-1 @ 25 g/kg seed as a bio-fertilizer should be applied for enhancing yield is recommended</p>	
32	<p>It is recommended to treat the seed of pigeonpea first with combined product of fungicide Carboxin (37.5 %) + Thiram (37.5 %) @ 3g/kg followed by <i>Trichoderma viride</i> @10g/kg of seed to reduced the wilt incidence and obtaining higher grain yield.</p>	




33	<p>programme as a donor for On the basis of multi-year screening, Amravati centre soybean genotypes viz. AMS 243, AMS 358, AMS MB 5-18 and AMS MB 5-19 were recommended for utilization in crossing resistance to root rot.</p>	
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	<p><b>Soil Water Conservation</b></p>	
34	<p>For Higher <i>in-situ</i> soil and moisture conservation, yield, energy and water use efficiency contour cultivation with ridges and furrow after 30days of sowings recommended for Jawar and Cotton.</p>	
	<p><b>Agril.Engg.</b></p>	
35	<p>The process for preparation of RTE PDKV puffets from composite flour of finger millet foxtail millet, pearl millet, barnyard millet added with sprouted soybean cold extruded using microwave puffing is recommended.</p>	
36	<p>.For maximum retention of volatile oil and piperine content of piper longum the fluidized bed drying and tray drying method at 50 °C temperature is recommended.</p>	
37	<p>It is recommended to use PDKV green pigeon pea pod shelling machine for green chickpea pod shelling (capacity 25 Kg/h) by using abrasive perforated steel sheet wrapped</p>	

	<p>rubber roller.</p>	
<p>38</p>	<p>It is recommended that fresh green pigeon pea kernels after blanching in hot water at 95°C for 1 minute with pretreatment of citric acid and KMS @ 0.24%, packed in 300 gauge polypropelene can be stored up to 12 days in ambient condition (15-38° C temp 19-49 % RH) Fresh green pigeonpea kernels blanched in hot water at 95° C for 7 minutes with pretreatment of citric acid and KMS @ 0.24 %, packed in 200 gauge polypropylene can be stored in refrigerated (7-8° C temp and 80-85 % RH) condition up to 40 days and in cold storage condition (1-3° C temp. And 90 % RH) up to 90 days. .</p>	
<p>39</p>	<p>It is recommended to use roller of emery 30+36 (1:1) with 900 rpm speed and 18 mm clearance between roller and sieve in PKV Mini dal mill for higher of greengram and black gram dehulled split (83 % and 82 % respectively). .</p>	
<p>40</p>	<p>It is recommended to use higher capacity PKV mini dal mill (5 HP), PKV mini mill (1 HP) and Laboratory working model of PKV mini dal mill as per requirement for milling of pulses. .</p>	
<p>41</p>	<p>It is recommended to use the PDKV turmeric slicing machine for slicing of potato and ginger (capacity 2.5 q/h)</p>	

42	<p>After field curing by farmers method, it is recommended to provide natural ventilation using perforated PVC pipes (pipe dia. – 63 mm, hole dia. – 25 mm and no. of pipes-9 ) in onion storage structures [5 m (L) x 1.5 m (W) x 1 m (H)] for minimizing the overall losses during storage of onions.</p>	 <p>A photograph showing the interior of an onion storage structure. The structure is a long, narrow tunnel with a low ceiling. The walls and floor are lined with large, perforated PVC pipes. Several people are standing in the middle of the structure, looking at the pipes. The onions are piled up on the floor.</p>
43	<p>It is recommended to use PDKV hallow tumbler tiles with 20% saw dust for roofing material</p>	 <p>Two photographs showing the roofing material. The left photo shows a long, narrow structure with a roof made of hollow tumbler tiles. The right photo shows a close-up of the roof structure, showing the tiles and the supporting beams.</p>
44	<p>It is recommended to use PDKV single basin solar still coupled with evacuated tube collector to enhance thermal efficiency and maximise the pure water yield</p>	 <p>Two photographs showing the solar still and evacuated tube collector. The top photo shows a close-up of the evacuated tube collector, which is a series of blue tubes mounted on a metal frame. The bottom photo shows the solar still, which is a large, rectangular structure with a glass cover and a metal frame, mounted on a concrete base.</p>
45	<p>It is recommended to use PDKV developed briquetted bio mass cook stove for community kitchen to save fuels</p>	 <p>A photograph showing a community kitchen. A man in a white shirt is standing next to a large, cylindrical, stainless steel cook stove. Another man in a purple shirt is standing next to him, looking at the stove. The stove is mounted on a wooden counter.</p>



46	It is recommended to use drip irrigation at 80% ET with polythelene mulch( Silver-black colour and 50 micron thickness) for heighest growth and yield of tomato crop with highest B.C.ratio	
47	It is recommended to use developed drainage coefficient for desining agricultural drainage systems for respective tehsil of different districts of vidharbha region	

	<b>Social Sci</b>	
48	From the research study on “Adoption status of the pesticide as per the label claims by the gram growers in vidarbha” it is recommended that for increasing the adoption status of the insecticides and fungicides as per the label claims by the gram grower organize regular training/work shops for the gram grower about the label claims of pesticides. Distributed printed materials,display flex /banners in villages indicating the list of crop and pest specific pesticides approved by CIBRC for information and use of the farmers and give wide publicity through mass media for creating awareness about the label claims of pesticide. Central Insecticides Board and Registration Committee( CIBRC) should take care to provide the readable label with the pesticides.	
49	From the research study on “Assessment of self Efficacy and stress mindset measures of the farmers in distress prone area of vidarbha”It is recommended that, for improvement of optimism,self esteem,self efficacy and stress mindset of the farmers in distress prone area,regular counselling and need based training should be provided.	
50	It is recommended to increase the communication behaviour of Agriculture Assistants that, for timely and effective communication of agril. Assistant with farmers,government should provide laptop, smart mobile phone internet facilities to them and reduce their official paper work load and they should be providedtraining on modern agricultural technology.	
51	To make attitude of rural youth more favorable towards agriculture as an occupation it is recommended that youth should involve in skill development programme,incubation center shall be establish at Agriculture University and need to include the agriculture subject in course curri culum of primary level schooling.	
52	In Eastern Vidarbha district lathyrus crop required low inputs with high B;C ratio in marginal and small size of holding farmers in rainfed cultivation during rabi season as a relay crop. Therefore, it is recommended to develop high yielding varieties of lathyrus and suggest the suitable improved technology by University for increasing the production of lathyrus which helps to improve the economical condition of marginal and small farmers in rainfed area.	