

RESEARCH RECOMMENDATIONS OF 2017

Crop varieties developed by the University

1) Rice : Ratnagiri-6

- Semi dwarf in height (100 to 110 cm).
- Midlate in duration (118 to 125 days).
- Medium slender grain type.
- Resistant to stem borer, leaf folder and moderately resistant to gall midge.
- Higher milling percentage (70.30%).
- High head rice recovery percentage (66.19%).
- Average yield of 4.5 t/ha.

2) Rice : Ratnagiri-7 (Red Rice)

- Semi dwarf in height (100 to 110 cm).
- Midlate in duration (122 to 125 days).
- Short bold grain type.
- Higher milling percentage (64.17%).
- High head rice recovery percentage (60.65%).
- Average yield of 4.5 to 5.0 t/ha.

3) Rice : Karjat-10

Karjat-10, a medium dwarf, fine variety is newly developed by university. The duration of this variety is 140 to 145 days with average yield about of 50 to 52 q/ha. This variety is recommended for Konkan region as well as other parts of Maharashtra state.

4) Groundnut : Konkan Bhuratna

- Dwarf in height (25 to 30 cm)
- Medium duration (115 to 120 days)
- Medium bold grain (100 kernel weight 45 to 50 g)
- Shelling percentage
Kharif 73.5 to 76.0% &
Rabi 70.2 to 76.3%
- It is having 26 days Fresh seed dormancy
- 50.01 % oil content and 23.44 % Protein content
- Resistant to early and late leaf spot, rust, PBND and alternaria leaf blight diseases
- Resistant to thrips, jassids, leaf miner and defoliator insect and pests.
- Average yield of 25 to 30 q/ha.

5) Brinjal : Konkan Prabha

It is recommended to release the high yielding variety 'Konkan Prabha' (DPLBr-3) of Brinjal for cultivation in Konkan region during Rabi season.

6) Tomato : Konkan Vijay

It is recommended to release the high yielding variety 'Konkan Vijay' (DPLTo – 5) of Tomato for cultivation in Konkan region during rabi season.

Farm implement developed by the university

1) Power Operated Coconut Dehusker

Dr. BSKKV developed Motor operated (1 H.P.) coconut dehusker is recommended for coconut dehusking.

2) Cranking type Paddy transplanter

Dr. DBSKKV developed women friendly manually operated (cranking type) paddy transplanter is recommended for transplanting of root washed paddy seedlings.

Recommendations based on crop production technologies

A) Natural Resource Management

Soil Fertility and Crop Nutrition Management

1. Groundnut sown at 30 X 15 cm (plant population @ 2.22 lakhs ha⁻¹) planting geometry with 125% RDF (31.25 kg N + 62.5 kg P₂O₅ ha⁻¹) is recommended to obtain higher production and profitability from *rabi* summer groundnut under lateritic soils of *Konkan*.
2. In lateritic soils of Konkan region for obtaining higher yield and net returns from sugarcane, it should be grown by paired row planting on ridges and furrows with drip irrigation by using single bud setting raised in soil + FYM in 1:1 proportion and should be fertilized with recommended dose of fertilizers (250:125:125 NPK/ha through straight fertilizers.
3. In lateritic soil of south konkan coastal zone it is recommended to grow direct seeded rice by adopting conservation tillage on flat bed system along with the use of Konkan Annapurna Briquettes in combination with soil application of zinc sulphate and copper sulphate @ 175 kg ha⁻¹ @ 25 kg ha⁻¹ and @ 5 kg ha⁻¹ respectively for obtaining higher yield and net returns.
4. In North *Konkan Coastal Zone* of *Maharashtra*, to get higher yields and economic returns by sustaining soil fertility and productivity, application of 50 per cent RDF as inorganics and 50 per cent RDN through FYM to 'Rice – Sweet corn' cropping system is recommended.
5. The full package of practice i.e. FYM @ 7.5 t ha⁻¹, 25:50:0 NPK kg ha⁻¹, plant protection (monocrotophos 36 EC, quinalphos 25 EC, carbendazim + mancozeb) and weeding (pre emergence application of pendimethalin combined with one hand weeding

at 30-35 DAS) is recommended under optimum resource availability for obtaining higher productivity and profit from Rabi groundnut under lateritic soils of Konkan. However, under resource constraints first preference should be given to weed management followed by fertilizer management and plant protection measures, respectively.

6. For getting higher yield of cashewnut, it is recommended to apply two sprays of 0.1% CuSO₄ + 0.05% lime, one at flowering and one at fruit set to the crop along with recommended dose of fertilizer under Konkan condition.

Micro Nutrient

7. It is recommended to apply 150 % RDN along with 4 kg B ha⁻¹ through Konkan Annpurna Briquettes (KAB) to reduce the arecanut cracking and to get maximum yield of arecanut in Konkan region.

Horticultural crops

8. For obtaining higher production, profit and better water use efficiency with saving of 25% water under lateritic soils of *Konkan*, groundnut crop should be grown under transparent polythene mulch (7 micron thickness) with application of hydrogel @ 5.0 kg ha⁻¹ and use of integrated nutrient management (7.5 t ha⁻¹ FYM + RDF 25:50 N:P kg ha⁻¹) is recommended.

Weed Management

9. It is recommended to apply herbicide *Pretilachlor* 30.70 EC @ 0.50 kg a.i. per ha mixed with urea before sowing of sprouted rice seed (*rahu*) during *kharif* season to achieve higher returns under medium black soil of North Konkan

Integrated Farming System

10. The different farming components such as crops [rice (0.50 ha.), vegetables (0.27 ha.)], Horticulture crops [Coconut (0.15 ha.), Sapota (0.03) and Spices (0.01) on bund], livestock [Fish pond (0.2035 ha.) and Poultry (0.0035 ha.)] and complementary [Vermicompost (0.0040 ha.), Kitchen garden (0.0028 ha.,)] are recommended in IFS model of north Konkan coastal saline soils. B:C ratio increases if size of pond is increased in IFS
11. In North Konkan Coastal Zone of Maharashtra, Rice-rice cropping system should be supplied with recommended dose of N, P₂O₅ and K₂O along with Zinc (Kharif- 120:50:50:6 and Rabi- 100:50:50:0 kg ha⁻¹) to obtain higher yield and economic returns.
12. In Konkan region it is recommended that, for obtaining higher yield and net returns, suru sugarcane be planted in paired rows at 60 cm X 60 cm - 120 cm and intercropped with two rows of sweet corn at 45 cm spacing between paired row.
13. In North Konkan Coastal Zone, to get higher yields and economic returns, it is recommended to grow 'Rice – Brinjal' and 'Rice – Sweet corn' systems under minimum tillage along with the application of 125 per cent RDF to both the systems and

application of rice straw @ 3 t ha⁻¹ to Brinjal and Sweet corn, so as to counteract adverse effects of climate change through resource conservation.

14. In North Konkan Coastal Zone of Maharashtra, Rice-Fodder maize and Rice-Berseem food-Fodder cropping sequences are recommended for obtaining higher yield and economic returns.

Forestry and Agroforestry

15. Under Agroforestry system, *Acacia mangium*, *Gliricidia sepium*, *Pterocarpus marsupium* and *Acacia catechu* are recommended for building up soil fertility and to be planted as a source of nutrients in lateritic soils of Konkan Region.

Integrated Farming System

16. For North Konkan Coastal Zone of Maharashtra, Crop + Dairy farming system is recommended. For obtaining maximum net returns, rice – cluster bean cropping should be followed. The dairy component should consist of 1 buffalo or 2 cows in addition to 1 goat and two poultry birds. The interventions like forage crop, mineral mixture, vermicompost and value addition of grain and milk are necessary. The farmers' training on crop and livestock management are also essential.

B) Horticulture

Guava

1. It is recommended to cultivate the improved variety 'Sardar' of guava in the Konkan region of Maharashtra.

Ginger

2. For getting the maximum yield and returns, it is recommended to use the pro-tray seedlings method for cultivation of ginger in Konkan region.

Bush Black pepper

3. It is recommended to plant bush pepper propagated by cuttings at the spacing of 1.0 m x 1.0 m in 50 % green shade net for getting higher yield under Konkan agro-climatic condition.

Coconut

4. For getting the higher yield and returns in coconut based cropping system, it is recommended to cultivate lily flower crop as an intercrop under Konkan agro-climatic condition.

Jasmine

5. Pruning of Indian Jasmine (*Kagda*) at 75 cm height from ground level during first fortnight of June is recommended for higher flower yield and net returns under North Konkan region.

Golden Champak

6. Planting of Golden Champaca *cv. Soundarya* for getting higher flower yield and net returns in North Konkan Coastal Zone.

Cashew

7. It is recommended to grow 'elephant foot yam' or 'greater yam' as an intercrop in well grown cashew nut plantation for getting the higher returns during *kharif* season in Konkan region.

C) Animal and Fisheries Science

1. It is recommended to supplement 0.5 per cent turmeric powder for better growth, dressing percentage, meat quality and economical returns in broilers.
2. It is recommended to reduce the existing fishing efforts by 34% to exploit the Kiddy Prawn at sustainable level (E= 0.5) from Alibag coast, while the fishing efforts are to be maintained at present level of exploitation along the coasts of Ratnagiri (E=0.53) and Mumbai (E= 0.46).
3. It is recommended to use 9 ppm clove oil (diluted in 1:9 ratio clove oil:ethanol) to transport 30 g of *Siganus canaliculatus* seed per lit for 12 hours.

D) Basic Sciences, Food Science and Technology

Food science and Technology

1. Finger Millet based Low Glycemic Index nutritious mix can be prepared as per the procedure developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.

Post Harvest Management

2. It is recommended to prepare RTS from processed ripe Alphonso mango pulp by the method developed by Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli

Plant Physiology

3. Rice varieties viz, Karjat-7, Karjat-3, Palghar-2, Karjat-2, Karjat-8, Palghar-1 and Karjat-6 developed by Dr.BSKKV, Dapoli found to be resilient rice varieties for giving stable yield under low light stress conditions of *kharif* season in Konkan.

Plant Protection

1. The insecticide Acephate 75 SP @ 12.5 gm per 10 lit of water is recommended for the management of rice stem borer. The application should be given, when the pest reaches ETL.

E) Agril. Engineering

Soil and Water Conservation Engineering

1. It is recommended that, for stability and economic viability of Cement Nala Bund, Earthen Nala Bund and all other similar structures, the personnel from agricultural engineering background should be involved for designing and execution of the work.

Electrical and Other Energy Sources Engineering

2. Dr. B.S.K.K.V. Developed Pico-hydroelectric power generator using 9 m head and diverted flow through 14 cm diameter pipe having jet of 1 cm is recommended for 39 watt power generation.
3. Dr. B. S. K. K. V., Dapoli developed single axis automatic solar tracking mechanism is recommended to increase output of solar photovoltaic panel.

Soil and Water Conservation Engineering

4. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli developed a grey water filter of 2.0 m (20 per cent freeboard) net depth is recommended for irrigation gardens / ornamental plants.
5. It is recommended to cultivate the strawberry var. Sweet Charlie on lateritic soils of Konkan region with 25 micron silver plastic mulching using inline drip (16mm ϕ , 0.3 m spacing, 4 lph) irrigation system with 321 mm total irrigation depth to get maximum monetary benefits (B:C ratio).
6. It is recommended to get the maximum productivity and net benefit (B:C ratio) from white onion var. Alibag local on lateritic soils of Konkan region with total 345.1 mm water (1 Et_c level) using inline drip (16 mm ϕ , 0.3 m spacing, 4 lph discharge) irrigation system and four splits per irrigation (30 minutes irrigation interval).

F) Social Sciences

Extension Education

1. Dr. balasaheb Sawant Konakn krishi Vidyapeeth, Dapoli in collaboration with the Department of Agriculture should organize Block Demonstrations of DBSKKV's varieties in Konkan region. Seed production programme should also be undertaken on large scale to ensure timely and needy supply of rice seed to the farmers. Special workshop be organized for owners of Krishi Seva Kendra to make them aware about rice varieties of DBSKKV, Dapoli.

Agril. Economics

1. It is recommended that farmers in the South Konkan region be motivated through extension agencies for increasing area under turmeric crop for additional income and employment generation. There was additional net income of Rs.1943/- per quintal when turmeric powder was sold in the market as compared to dry rhizomes. Therefore, it is recommended to sell the turmeric in powder form rather than selling in raw form.
2. It is recommended that the farmers of Alibag taluka be trained by the extension agencies for adopting improved practices for local white onion cultivation and storage methods.
3. It is recommended to develop harvester for harvesting Aonla fruits for minimizing economic losses to Aonla growers by the University. It is recommended to train growers regarding Aonla production technologies through demonstrations.

4. It is recommended to impart training to banana growers for adoption of modern cultivation practices to increase productivity and profitability through demonstrations in South Konkan region.

Sr. No.	Research Station / Department	GI Subject	Action Taken
A)	GI Registration		
1	Regional Fruit Research Station, Vengurle, Dist. Sindhudurg	Alphonso Mango GI Registration	Hearing of the last stage for GI registration of Alphonso Mango
2.	College of Horticulture, Mulde, Tal. Kudal, Dist. Sindhudurg	GI registration for Kokum and Cashew	The University has provided technical information for obtaining GI registration for Kokum and cashew
B)	Patents filed		
3.	College of Fisheries, Shirgaon, Ratnagiri	Low cost feed for increase in production of Shrimp	Patent application submitted vide No. 1887/Mum/2013, dated 25/8/2013. Patent has been published
4.	College of Fisheries, Shirgaon, Ratnagiri	To rare Macrobrazium Rosenbergii in artificial sea water	Patent application submitted vide No. 735/Mum/2013, dated 20/3/2013 has been submitted. Patent has been published is in process of approval
5.	Post Graduate Institute of Post Harvest Management, Killa-Roha, Dist. Raigad.	Natural flavour of Alphonso mango	12 patents for various countries have been submitted jointly by NCL, Pune and Dr.BSKKV, Dapoli for natural flavour of alphonso mango. Out of which 3 have been published.
6.	Post Graduate Institute of Post Harvest Management, Killa-Roha, Dist. Raigad.	Kokum Sarbat	The University vide application No. 201621001661 has submitted patent for processing.
7.	Post Graduate Institute of Post Harvest Management, Killa-Roha, Dist. Raigad.	Kokum Beverage (Dip Bag)	The University has submitted a patent for Kokum beverage (dip bag)

अ.क्र.	पीक	उत्पादन (क्विंटल)
अ)	भात	
१	मुलभूत बियाणे	२२.००
२	पैदासकार बियाणे	१४६.९६
३	पायाभूत बियाणे	३०९.३२
४	सत्यतादर्शक बियाणे	१४०३.३०
	एकूण भात	१८८१.६०
ब)	नाचणी	४४.००
क)	तेलवर्गीय पिके	२३६.५७
ड)	कडधान्य पिके	१४७.००
इ)	भाजीपाला पिके	४७.००
	एकूण	५४०.००
	सर्व एकूण	२४२१.६०
फ)	काजू बियाणे (क्विंटल)	२८९६.२०
ज)	नारळ बियाणे (नग)	१,२०,०००

Sr. No.	Crop	Production (Qtl.)
A)	Rice	
1	Nucleus seed	२२.००
2	Breeder seed	१४६.९६
3	Foundation seed	३०९.३२
4	Truthful seed	१४०३.३०
	Total (A)	१८८१.६०
B)	Finger millet	४४.००
C)	Oil seeds	२३६.५७
D)	Pulses	१४७.००
E)	Vegetables	४७.००
	Total	५४०.००
F)	Total (A to E)	२४२१.६०
G)	Cashew seed (Qtl)	२८९६.२०
	Coconut seed nuts (Nos)	१,२०,०००

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१.	आंबा	२.५४
२.	काजू	२.६९
३.	नारळ	१.५६
४.	चिजू	०.२४
५.	आवळा	०.१२
६.	कोकम	०.१८
७.	लिंबू	०.११
८.	जांभूळ	०.४४
९.	मसाला पिके	०.७०
१०.	सुपारी	०.२६
११.	औषधी व वनरोपे	१.१७
१२.	इतर (फुलरोपे, भाजीपाला रोपे, ४.५० उतीसंवर्धन रोपे व इतर रोपे)	
	एकूण	१४.५१

Sr. No.	Crop	Nos.
1	Mango	२.५४
2	Cashew	२.६९
3	Coconut	१.५६
4	Sapota	०.२४
5	Aonla	०.१२
6	Kokum	०.१८
7	Lemon	०.११
8	Jamun	०.४४
9	Spices and condiments	०.७०
10	Arecanut	०.२६
11	Medicinal and forest plants	१.१७
12	Other (flower, vegetable, tissue culture and others)	४.५०
	Total	१४.५१