

RESEARCH RECOMMENDATIONS OF 2015

Crop variety developed by the University

Aerial Yam: Konkan Kalika (KKVDb 1)

This variety has pale yellowish flesh colour, good taste and cooking quality, high marketable yield and tolerant to disease and pest. This variety is released for cultivation in kharif season in Konkan region of Maharashtra. The average yield of this variety is 4.85 tonnes per hectare and average weight of tuber is 56 gram.

Farm implement developed by the university

Foldable Coconut Dehusker

The university has developed and released 'Foldable Coconut Dehusker' having detachable handle for better performance and easy handling. The features of this implement are as follows.

- The dehusking capacity of this dehusker is 58 nuts/hr and dehusking efficiency is 93.70 per cent which is more than non-folding dehusker.
- The cost of dehusker is Rs. 340/- and cost of dehusking operation is Rs.0.465/nut.
- The work load on operator for coconut dehusking is less than non-folding type dehusker may be due to comfortable posture of working and suitable handle grip.
- The coconut dehusking by both manually operated coconut dehusker was below the acceptable workload and coconut dehusking operation is acceptable to all subjects.
- The coconut dehusking operation observed as light discomfort as compared to non-folding dehusker.
- The average Body Parts Discomfort Score (BPDS) for this dehusker was found to be 6.45.
- This coconut dehusker can be packed in carton for easy handling and transportation.

Recommendations based on crop production technologies

A) Field Crops

3. The variety Dapoli mung-1 (DPLM-26) is recommended for cultivation in rabi season in Konkan region. The duration of this variety is 71 to 75 days and height

of the crop is 50 to 55 cm. The average yield of this variety is 12 to 15 q/ha which is 9 to 10 per cent more over the control.

B) Natural Resource Management

1. In coastal saline soil of North Konkan region, under direct seeded practice method 100 kg/ha seed rate be used.
2. It is recommended to apply 25:50:30 N:P₂O₅:K₂O kg/ha and FYM @ 5 t/ha along with seed inoculation of Rhizobium and PSB @ 20 and 50 g/kg of seed, respectively, for obtaining maximum profit and yield of Rabi groundnut in lateritic soils of Konkan.
3. It is recommended to grow Cowpea crop under zero tilled condition during rabi hot weather season and two irrigations (at branching and pod filling stage) along with 100% recommended dose of fertilizer (25:50:00 NPK Kg/ha) should be applied below seed placement for obtaining higher yield, net returns and B:C ratio.
4. The cultivation of Managa bamboo (*Dendrocalamus stocksii*) is recommended in Konkan region.

C) Horticulture

1. Under recommended package of practices given by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli; the following weather parameters based equation is recommended for prediction of one week early flowering during the period of 1st December to 15th January in Alphonso mango under South Konkan coastal agro climatic conditions.

Flowering (forecast 1 week early) =	91.91 + 10.79 Tmax + 6.05 Tmin - 3.40 RH -I + 0.86 RH-II - 5.04 BSS - 3.48 Rainfall - 12.62 Rainy days	R ² =0.79
--	--	----------------------

2. Under standard package of practices as per recommendation of Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, the following weather parameters based equation is recommended for prediction of three week early emergence of vegetative flush during the period of last week of September to first week of November in Alphonso mango under South Konkan coastal agro climatic conditions.

Alphonso mango vegetative flush emergence (3 weeks early) =	49.47 + 0.44Tmax - 0.18 RH- II - 0.03 Rainfall - 1.61 Evaporation	R ² = 0.94
--	--	-----------------------

3. It is recommended to retain 5 sprouts after coppicing in regular harvesting season to get maximum yield of cinnamon bark and leaves.

4. To get the maximum flower yield of gerbera, it is recommended to cultivate the gerbera crop variety naturally ventilated polyhouse under konkan agroclimatic conditions.

D) Animal and Fisheries Science

1. Creep feed replaced with 20 per cent Azolla meal is recommended for body weight gain in Konkan Kanyal kids.
2. It is recommended to supplement 3 per cent black cumin (*Nigella sativa* L) seed powder in the diet of layer bird for reducing cholesterol and triglycerides of eggs.
3. It is recommended to feed *Nannochloropsis* @ 5.0 x10⁵ and 5.2x10⁵ cells/ml for mass production (241 and 476 individuals per ml) of rotifer (*B. rotundiformis*) in winter and summer season, respectively in 31 to 37 PSU sea water.
4. It is recommended that the use of 'f/2 media' at the rate of 0.5 ml per litre of seawater (32.37 psu) for higher production of *Chaetoceros* sp.
5. It is recommended that carp pituitary extract (female 1st dose 3 mg/kg, 2nd dose 10mg/kg at eight hour interval ; male 3mg/kg at 2nd dose of female) or synthetic hormone sGnRH-A (female 0.5ml/kg, male 0.4 ml/kg) or HCG (female 1st dose 2000 IU/kg, 2nd dose 3000 IU/kg at eight hour interval; male 1000 IU/kg at 2nd dose of female) are to be used for induced breeding of *Pangasianodon hypophthalmus*.

E) Basic Sciences

1. For in vitro regeneration of banana cv. Konkan Safed Velchi the treatment in the sequential order of Carbendazim 1% followed by Ethanol 70%, Sodium Hypochlorite 5% and Cefotaxime 250 mg/L for the period of 30, 1, 10 and 30 minutes, respectively produces aseptic culture.
2. In finger millet 500 Gy dose of radiation is better for creation desirable variability.
3. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth developed process for making jackfruit leather is recommended. This jackfruit leather can preserve upto 6 months in laminated aluminium foil.
4. It is recommended that acceptable khoa can be prepared from high acid milk by admixing fresh whole milk and by lowering acidity of mix up to 0.15 per cent.
5. It is recommended to prepare acceptable sandesh from skim milk by incorporation of coconut milk in 75:25 proportions.
6. It is recommended to prepare acceptable rassogolla by incorporation of jack fruit pulp @ 15 per cent of chhana.
7. It is recommended to extract the juice by the method developed by Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli, for preparation of aonla syrup.

F) Plant Protection

1. Pre conditioning of a larval parasitoid *Goniozus nephantidis* with frass and damaged coconut leaves at the time of mass multiplication of the parasitoid in the laboratory is recommended for maximum parasitization of coconut black headed caterpillar in the field.
2. Planting of Marigold between two rows of lesser yam or application of neem cake @ 100 g/pit at the time of planting is recommended for the management of root knot nematode of lesser yam.
3. The following Integrated Pest Management strategy is recommended for the effective management of coconut eriophyid mite.
 - Adoption of Phytosanitary measures in coconut gardens.
 - Root feeding of Azadirachtin F 5% - 7.5 ml + 7.5 ml water three times in a year (Oct.-November, Jan.-February and April-May).
 - Recycling of biomass generated within the coconut system by Vermicompost method.
 - Raising of green manure crop in the coconut basins (Sunhemp)
 - Application of recommended dose of fertilizers (Urea 3 kg, SSP 3 kg and MOP 3.5 kg per palm per year) in three split doses (June, October and February).
 - Recommended level of irrigation during summer months.
 - Soil moisture conservation coconut husk burial in the basin and mulching the basins (2m radius) with coconut leaves.

G) Agril. Engineering

1. The soil erodibility map prepared by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli is recommended for estimation of soil erodibility in Konkan Region.
2. For drying of Nutmeg (Up to 3 kg) Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli has developed drying unit which is recommended as a attachment for commercially available 27 litre capacity biomass fired water heating system.
3. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli developed portable and folding type solar dryer is recommended for drying of homescale agricultural products upto 2 kg.
4. It is recommended to use non slip latex gloves during cashewnut deshelling for protection of hands from Cashew Nut Shell Liquid (CNSL).

5. It is recommended to irrigate the white onion var. Alibag local on lateritic soils of Konkan region with 20 per cent deficit water as compared to usual irrigation requirement to get maximum water use efficiency.
6. For determining talukawise surface drainage pattern of Palghar district it is recommended to use drainage coefficient developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. The map developed in Geographical Information System(GIS) be used as alternative to these drainage coefficients.
7. For determining talukawise surface drainage pattern of Thane district it is recommended to use drainage coefficient developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. The map developed in Geographical Information System (GIS) be used as alternative to these drainage coefficients.
8. For determining talukawise surface drainage pattern of Raigad district it is recommended to use drainage coefficient developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. The map developed in Geographical Information System (GIS) be used as alternative to these drainage coefficients.

H) Social Sciences

1. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli needs to undertake research programme on development of short duration groundnut variety suitable for Konkan region.
2. Cluster demonstrations on polythene mulch and drum rolling technology in groundnut should be undertaken in project mode on a large scale by the extension agencies.
3. Suitable labour and time saving urea briquettes applicator for utilising in puddled rice fields in Konkan region be developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.
4. The every Rs.100/- invested on rice research and extension yields Rs.10.16 per annum. In Konkan region, even though area under rice is declining (0.39), productivity of rice is increasing (1.39%). The growth in productivity could be attributed to the technological change brought by the research and extension in rice. Hence, it is recommended that government should provide more funds for research and extension in rice crop in order to increase rice production.
5. The benefit cost ratio in sapota powder 4.82 and chips 4.20 indicated that each rupees invested in sapota processing gave higher returns and provided subsidiary income and employment to household. It is recommended to strengthen the capacity building of women and youth for employment generation and profitability through value addition in sapota.