# Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth

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# RESEARCH RECOMMENDATIONS OF 2023
# Recommendations based on crop production technology

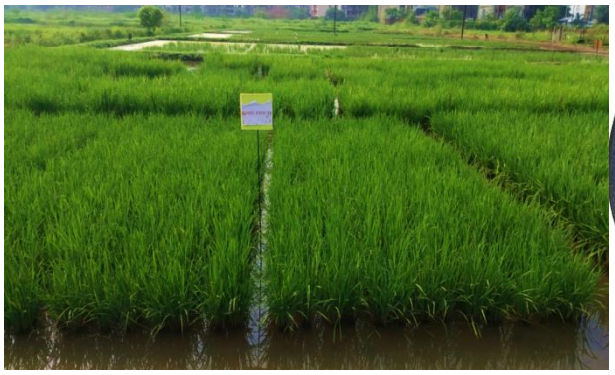
## Crop Varieties developed by the University:

### Rice - Konkan Sanjay (KJTR-3) :

Konkan Sanjay a high yielding rice variety having mid early duration, semi dwarf, long slender grain type is recommended for commercial cultivation in traditional rice growing areas of Maharashtra state.

### Rice -Trombay Konkan Khara( BRCKKV-16) :

Trombay Konkan Khara (BRCKKV-16) a high yielding rice variety having dwarf with long slender grain, good grain quality is recommended for commercial cultivation in costal soils of Maharashtra state.



## Yard Long Bean:

It is recommended for release long podded and high yielding variety 'Konkan Sharada (DPL-YB-9)' of yard long bean for cultivation in Konkan region during rabi-summer season.

# Farm implement developed by the university

## DBSKKV Fish Dressing Platform:

'DBSKKV fish dressing platform' is recommended for release for fish dressing in pre-processing section of fish processing industry.

**Salient Features:**

- Suitable of fish dressing operation in pre-processing sheds of fish processing industry.
- Comfortable seating posture for fish dressing operations.
- Fish dressing platform is developed taking into consideration anthropometric data of women workers.
- Suitable to minimize work related issues for example- knee pain, back pain, leg pain and neck pain etc.
- Hygienic method of fish dressing.
- Fish dressing capacity of developed platform was 85.64 kg/h (16% more than conventional practice).

**Recommendations Based on Crop Production Technologies:**

**A) Natural Resource Management:**

**Agro metrology**

1. It is recommended to use following weather based registration model for prediction of vegetative flush emergence in Alphonso mango before three or four weeks by using seven days average temperature from second fortnight of September ($38^{th}$ met

week) and onwards in orchards managed by using recommended technology given by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli under Konkan agro-climatic conditions.

Alphonso mango vegetative flush emergence (3 weeks before)

= 31.600+0.757*TMAX- 0.551*TMINI $R^2$=0.75**

Alphonso mango vegetative flush emergence (4 weeks before)

= 26.848+1.110*TMAX- 0.768*TMINI $R^2$=0.64**

** Significant at 1%

2. It is recommended to sow early, mid late and late rice varieties developed by D. Balasaheb Sawant Konkan Krishi Vidyapeeth in Sindhudurga district for obtaining stable yield under varying climatic condition as suggested in following table .

| Sr. No. | Sowing period | Rice varieties | | |
|---|---|---|---|---|
| | | Early | Mid late | Late |
| 1 | 23rd Metrological week (04 to 10 June ) | Karjat -3 and Phondaghat-1 | Palghar-1, Karjat-5 and Karjat-9 | Karjat -2 and Ratnagiri-8 |

3. It is recommended to sow early, mid late and late rice varieties developed by D. Balasaheb Sawant Konkan Krishi Vidyapeeth in Ratnagiri district for obtaining stable yield under varying climatic condition as suggested in following table .

| **Sr. No.** | **Sowing period** | **Rice varieties** | | |
|---|---|---|---|---|
| | | **Early** | **Mid late** | **Late** |
| 1 | 23rd Metrological week (04 to 10 June ) | - | Karjat-5 | - |
| 2 | 24th Metrological week (11 to 17 June ) | Ratnagiri-1 | - | Ratnagiri-3 and Ratnagiri-8 |

4. It is recommended to sow early, mid late and late rice varieties developed by D. Balasaheb Sawant Konkan Krishi Vidyapeeth in Raigad district for obtaining stable yield under varying climatic condition as suggested in following table .

| **Sr. No.** | **Sowing period** | **Rice varieties** | | |
|---|---|---|---|---|
| | | **Early** | **Mid late** | **Late** |
| 1 | 23rd Metrological week (04 to 10 June ) | - | Ratnagiri-6, Ratnagiri-7, Karjat-5 and Karjat-9 | Ratnagiri-8 |
| 2 | 24th Metrological week (11 to 17 June ) | Karjat-7, Karjat-3 and Phondaghat-1 | - | - |

5. It is recommended to sow early rice varieties developed by D. Balasaheb Sawant Konkan Krishi Vidyapeeth in Palghar district for obtaining stable yield under varying climatic condition as suggested in following table .

| Sr. No. | Sowing period | Rice varieties |
|---|---|---|
| | | Early |
| 1 | 24th to25th Metrological week (11to 24 June ) | Karjat-7, Karjat-3, Ratnagiri-1and Phondaghat-1 |

**Soil Fertility and Crop Nutrient Management**

6. It is recommended that cultivation of spider lily at the spacing of 30 cm x 60 cm with an application of 25 tonnes of FYM along with 300 kg nitrogen, 100 kg phosphorous , 50 kg potash $ha^{-1}$ for higher yield of flowers bud and net returns under konkan agro climatic conditions.
7. It is recommended to cultivate DHN-6 variety of Bajra Napier hybrid supplied with 225:75:60 N : $P_2O_5$ :$K_2O$ kg $ha^{-1}$ as per the schedule below to get higher yield and better economic returns in South Konkan region of Maharashtra.

| Time of application | N (kg $ha^{-1}$) | $P_2O_5$ (kg $ha^{-1}$) | $K_2O$(kg $ha^{-1}$) |
|---|---|---|---|
| Basal dose | 75 | 37.5 | 30 |
| $1^{st}$ earthing up (60 DAP) | 30 | 37.5 | 30 |
| Top dressing after each cut (4 times) | 30 | - | - |

8. It is recommended to sow fodder maize var. African tall at 60 cm x 20 cm spacing along with 120:50: 40 N : $P_2O_5$ :$K_2O$ kg $ha^{-1}$ as a basal dose and 36 kg N at 35 DAS and 36 kg N at 60 DAS $ha^{-1}$ to obtain higher seed yield and economic returns in Konkan region of Maharashtra.

**Weed Management**

9. Application of pre emergence herbicide Oxadiargyl 80% WP @ 100 g a.i.$ha^{-1}$ at 2-3 DAS Metasulfuron –methyl + chloromuron –ethyl @ 4 g a.i. $ha^{-1}$ at 25 DAS or Oxadiargyl 80% WP @ 100 g.a.i. $ha^{-1}$at 30 DAS in direct seeded rahu rice during kharif for effective control of weeds and obtaining higher yield net returns in Konkan region is recommended.

**Cropping Methods and Integrated Farming**

10. It is recommended to grow groundnut in Konkan during Rabi –Summer season under paddy straw mulch and be irrigated daily through drip irrigation with total irrigation depth of 371 ha mm and fertigated with 100% RDF (25kg N and 50 kg $P_2O_5$ $ha^{-1}$) through water soluble fertilizers in five equal splits of six days interval to get maximum yield and more economic returns and water saving.
11. It is recommended to sow fodder oat in 44 MW ( 29 October to 4 November ) with 100 kg $ha^{-1}$ seed rate to get higher yield and better economic returns in konkan region of Maharashtra.
12. It is recommended to use poultry manure @100 % (2.90 t/ha) of Goat manure @100% (3.23 t/ha) of RDN for getting highest yield, improvement in soil properties, higher oil content and highest return for Vekhand cultivation in Konkan region.

**B) Horticulture:**

1. **Mango :-**

   For getting healthy growth of raising mango stone graft Cv. Alphonso, it is recommended to use cocopeat + leaf manure + compost (1:1:2) as a media mixture for bag filling.

2. **Mango :-**
   For enhancing increasing weight and reducing incidence of spongy tissue, stem end rot and spotted fruits, pre harvest bagging of fruits with brown colour bag (53 G.S.M) and black colour from inside ( 33G.S.M.) having size 28 cm x 20 cm at egg stage and removal of bag at 50 days after bagging is recommended.
3. **Cashew :-**
   It is recommended to grow yard long bean as intercrop during initial five years of cashew plantation for getting the higher returns during Rabi season in Konkan region.
4. **Nutmeg:-**
   For reducing saleable period of grafts of nutmeg, 6 sprays of 0.4% humic acid 15% at 15 days interval after 45 days of grafting are recommended.
5. **Black pepper :-**
   It is recommended to plant bush pepper under 50% shade net at the spacing of 1.5 m x 1.0 m for getting higher yield and economic benefit under Konkan region.
6. It is recommended to use 50% green colour shade net condition in October to May for better overall performance of Red Acaalypha, Green Acalypha, Malphigia, Arelia, Croton, Coleus under Konkan agro climatic condition.

**C) Animal and Fisheries Sciences:,**
**Diary Sciences**

1. Low cost automatic egg incubator developed by KKV, Dapoli in recommended for better hatchability.

**Fisheries Sciences**

1. It is recommended to use Siganus canaliculatus ( mutri masa)fish for preparation of value-added products due to more Docosahexaenoic acid (DHA) omega-3 fatty acid content than other two Siganus species
2. Since more than half of the catches landed for Indian mackerel, Rastrelliger kanagurta (54.04%) and for false trevally, Lactarius ( 51.04%) comprises of juveniles, it is recommended to avoid exploitation of juvenile fishes I order to minimize economical and ecological losses to the marine capture fisheries of Ratnagiri coast.
3. It is recommended to use a fermented mixture of Wheat bran + Poultry feed soaked in baker*s yeast in equal proportion + Probiotics ( 60ml/kg ) in air tight plastic bags for two day to attract and obtain maximum egg clutches of wild Soldier fly Hermetia illucena (Linnaeus,1758 )
4. It is recommended to maintain water hardness in the range of 60mg/L ( CaCl2-1.038mg/Land MgCl2-0.096mg/L) to 120 mg/L (CaCl2-2.075mg/L mg/L and MgCL2-0.192mg/L ) for better growth and survival of swordtail
5. It is recommended to stock Genetically Improved Farmed Tilapia ( GIFT ) fry ( TL 2.5-3.5 cm) at the rate of 75 and 100 number per cubic meter for a period of 2 to 2.5 months to achieve better growth ( 9 to 10 g) in nursery biofloc system

**D) Post Harvest Management**

1. The harvesting of Surangi flowers at fully developed open flowers and storage for five days is recommended for higher yield of essential oil.

2. The storage of Long pepper in PET polyethylene tetrephthalate jar for 6 months (180 days) is recommended for higher Piperin, Essential oil and chemical properties.
3. The process technology is recommended to prepare turmeric paste by using fresh turmeric rhizomes, water, vinegar, starch and 250 ppm sodium benzoate of 1.23 Pa Sec consistency packed in reportable pouches and stored at refrigerated condition for 180 days.

**E) Plant Protection:**

**Plant Pathology**

1. For effective reduction of water melon bud necrosis disease and subsequent increasing in yield and net returns following integrated management practice is recommended.
   1 Use of black polythene mulching ( 30 µ) before sowing.
   2 Drenching of Pseudomonas Fluorescens 5 g/lit at true leaf stage.
   3 Use of blue sticky trap ( 30 trap/ha) in the field.
   4 Spraying of Imidachloprid 17.6 SL(0.3ml /lit ) at 30 DAS.
   5 Spraying of Aadirectin 10000 ppm @ 9 2 ml /lit) at 45 DAS.

**Agril. Entomology**

2. For capturing of stingless bee colony from its natural habitat following technology developed by Dr. BSKKV, Dapoli is recommended.

| Technology diagram | Specification |
|---|---|
|   | 1. Design PVC pipe /trap @Two chamber (3”- 20 cm and 2.5”- 18 cm) after rainy season.<br>2. Make small 5mm hole at lower on front side of designed hive.<br>3. Take small PVC pipe @ 5 inch long with 25 mm diameter.<br>4. Fixed its one end at upper on back side of hive and other end insert in natural habitat of bee colony entrance.<br>5. Plug all crakes and crevices on natural habitat with adhesive and cement materials.<br>6. Keep it as such for four months for capturing of colony |

**F) Agricultural Engineering:**

1. Dr. BSKKV developed Kitchen Waste Based Biogas unit of 20 lit. capacity is recommended for waste management.
2. The ‘DBSKKV High Rise Bamboo Polyhouse (DHRBP)’ developed by DBSKKV Dapoli (gutter height = 4.6 m) is recommended for better inside environmental control and to use the fullest crop potential.

3. The ‘DBSKKV Bamboo Polyhouse Innovative Joints (DBPIJ)’ developed by DBSKKV Dapoli are recommended for joining of bamboo structural members during construction of bamboo polyhouses.
4. The ‘DBSKKV Solar Radiation Shield (DSRS-V1)’ developed by DBSKKV Dapoli is recommended for use with the respective sensors for accurate measurement of temperature and relative humidity under varied agricultural and other industrial applications.
5. The “DBSKKV Automatic Fogging System (DAFS)” developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth is recommended to use in a Naturally Ventilated Polyhouse to control air temperature and relative humidity (VPD) at optimum levels for the crops.
6. The “DBSKKV Bamboo Polyhouse Design Calculator (DBPDC)” developed by DBSKKV Dapoli is recommended for the design of structural members of naturally ventilated bamboo polyhouses of different sizes.

**G) Social Sciences:**

**Agril. Extension Education**

1. It is recommended that DBSKKV, Dapoli should undertake massive seed production programme of hybrid rice in Public Private Partnership (PPP) mode.
2. On the basis of the findings of the study it is recommended that
   - More training on fruit and vegetable processing should be undertaken for employment generation in Konkan region. During the training programme emphasize should be given on providing information on marketing, packaging and preparation of project proposal.
   - Awareness programme should be conducted on digital information available in online mode about different schemes related to entrepreneurship development in fruit and vegetable processing.

**Agril Economics**

1. Considering large domestic demand for Cashewnut kernel, relatively low export in spite of higher processing capacity (16.54 lakh MT), increase in processing capacity of African countries and their by reduction in import of Cashewnut to India; it is recommended that in case of Konkan region out of cultivable land (15.21 lakh ha) additional area about 46244 ha in Konkan region such as Ratnagiri district (16522 ha), Sindhudurg district (5646 ha ), Raigad district (13570 ha), Thane district (4515 ha) and Palghar district (5992 ha) should be brought under cashewnut plantation in next three years for export promotion and self-sufficiency.

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