

Department of Soil Science and Agril. Chemistry, College of Agriculture, Dapoli

(Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli)

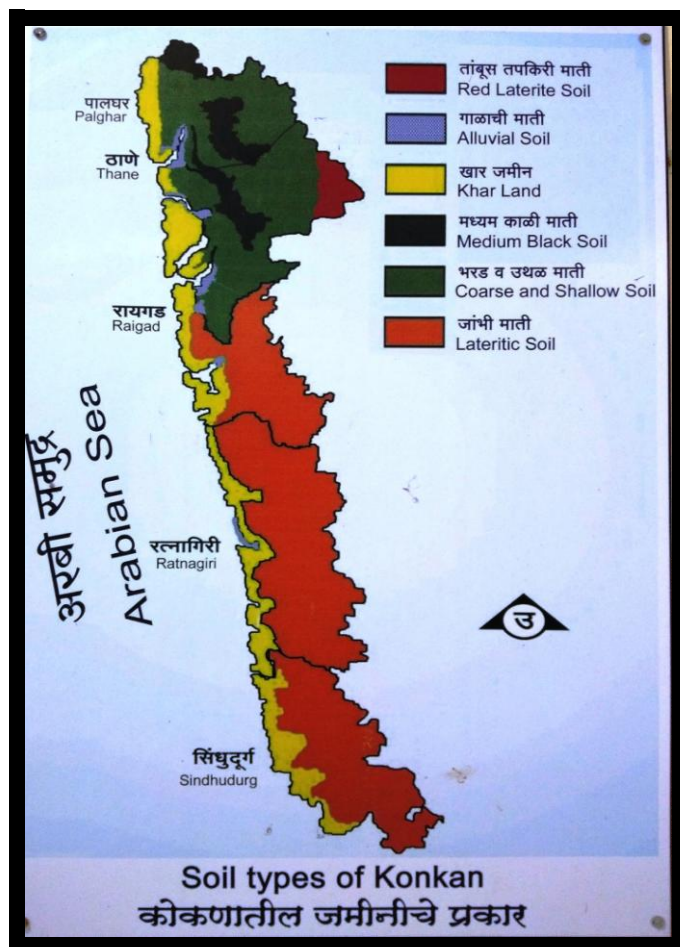
1. Name of the Department/ Section: Department of Soil Science and Agricultural Chemistry

2. About Department:

College of Agriculture, Dapoli was established in the year 1965. Chemistry section of the College also came into existence in the same year. With the establishment of Konkan Krishi Vidyapeeth, Dapoli in the year 1972, the Chemistry section of the College turned into the Department of Agricultural Chemistry and Soil Science. M.Sc. (Ag.) Degree programme was started in the year 1975 and Ph.D. programme was started in the year 2002. Further, it was renamed as Soil Science and Agricultural Chemistry.

Mandates of the Department

1. To carry out education and extension education activities pertinent to the field of Soil Science Agril. Chemistry and Biochemistry.
2. To carry out the basic and strategic research on physical, chemical and biological process of soils of the Konkan region for better management of inputs i.e. nutrients and water.
3. To develop appropriate technology for sustainable crop production and soil fertility with efficient system of input management for the soils of the Konkan region of Maharashtra.



3 Academic Programmes of the Department:

a. Doctoral Programmes:

Semester No.	Term No.	Course No.	Credits	Title of the course offered by the department
I	I	Soil-601	2+0	Recent Trends in Soil Physics
		Soil-603	2+0	Physical Chemistry of Soil
		Soil-604	2+0	Soil Genesis and Micro Morphology
II	II	Soil-602	2+0	Modern Concept in Soil fertility
		Soil-605	2+0	Biochemistry of Soil Organic Matter
III	I	Soil-606	3+0	Soil Resource Management
		Soil-691	1+0	Doctoral Seminar
		Soil-699	0+10	Research
IV	I	Soil-692	1+0	Doctoral Seminar
		Soil-699	0+25	Research
V	I	Soil-699	0+25	Research
VI	II	Soil-699	0+15	Research

Course Curricula and syllabi: Annexure-I

b. Masters Programmes

Semester No.	Term No.	Course No.	Credits	Title of the course offered by the department
I	I	Soil-501	2+1	Soil Physics
		Soil-503	2+1	Soil Chemistry
		Soil-504	2+1	Soil Mineralogy, Genesis and Classification
		Soil-510	0+2	Analytical Techniques and Instrumental Methods in Soil and Plant Analysis
		PGS-504	0+1	Basic Concepts in Laboratory Techniques
II	II	Soil-502	2+1	Soil Fertility and Fertilizer Use
		Soil-508	2+1	Soil, Water and Air Pollution
		Soil-506	2+1	Soil Biology and Biochemistry
		Biochem-501	3+1	Basic Biochemistry
III	I	Soil-591	1+0	Master's Seminar
		Soil-599	0+10	Research
IV	I	Soil-599	0+20	Research

Course Curricula and syllabi: Annexure-II

c. Bachelor Programmes

Sr. No.	Semester	Course No.	Credits	Course Title
B.S. (Agri.)				
1	I	SSAC 111	3(2+1)	Fundamentals of Soil Science
2	IV	SSAC 242	2(1+1)	Problematic Soils and their Management
3	V	SSAC 353	3(2+1)	Manures, Fertilizers and Soil Fertility Management
4	VI	ELE SSAC 364	3(2+1)	Agrochemicals
5	VIII	ELM SSAC 485	10(0+10)	Soil, Water, Plant and Fertilizer Analysis
6	VIII	ELM SSAC 486	10(0+10)	Agricultural Waste Management
7.	III	BIOCHEM 231	3(2+1)	Fundamentals of Plant Biochemistry and Biotechnology
8.	IV	ELE FST 351	3(2+1)	Food Safety and Standards (Elective)
9.	VI	FST-362	(2+1)	Principles of Food Science and Nutrition
10.	VII	RAWE & AIA-475	(0+1)	RAWE & Industrial Training Attachment
B.Sc. (Hort.)				
1.	I	H/SSAC-111	(1+1) 2	Fundamentals of Soil Science
2.	II	H/SSAC – 122	(1+1) 2	Soil Fertility and Nutrient Management
3.	IV	H/SSAC-243	(1+1) 2	Soil, Water and plant analysis
4.	I	H/BIOCHEM-111	(1+1) 2	Elementary Plant Biochemistry
5.	III	H/PHT-231	(1+1) 2	Fundamentals of Food and Nutrition
6.	VII	RHWE-SSAC-476	(0+1)	Soil test & Integrated Management
B.Sc. (Forestry)				
1.	I	F/SSAC 111	2 (1+1)	Geology and Soils
2.	I	F/SSAC 112	3 (2+1)	Soil Biology & Fertility
B. Tech. (Agril. Engg.)				
1.	I	AS-SS 111	2(1+1)	Principles of Soil Science

4 Infrastructure

a. Laboratories:

The Department of SSAC has four laboratories, one for PG students and three for UG practicals. All laboratories are well furnished and well equipped.



Well equipped Central Instrumentation Center (CIC) for Ph.D. and Post Graduate students for research was established in the year 2001 under this Department. In the CIC, the microprocessor based instruments like Atomic Absorption Spectrophotometer, spectrophotometer, flame-photometer; pH-meter, EC-meter etc. are kept for the PG student and university scientists research work.

b. Name of the important instrument/facilities:

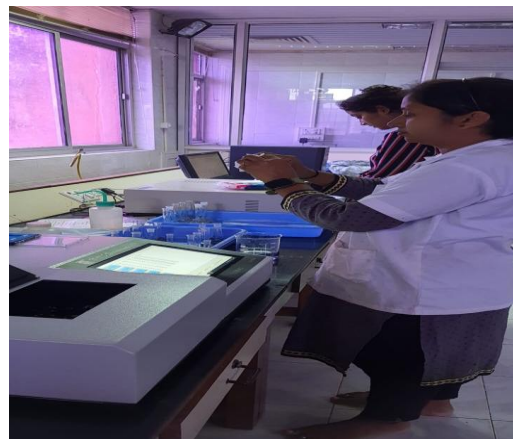
Sr. No.	Name of the Instruments	No.	Model No.	Make
1.	Flame Photometer	02	CL378	Elico
2.	Atomic Absorption Spectrophotometer	01	iCE3300 FL AA System	Thermofisher
3.	Spectrophotometer	02	Sys. 166 Sys. 169 Sys. 106	Systronics , Mumbai
4	pH – meter	01	361	-,-
5.	EC meter	02	306 & 308	-,-
6.	Double Beam Spectrophotometer	02	2202 Sys	-,-
7.	Digestion unit	01	IL8 M12	Pelican, Chennai
8.	Distillation Unit	01	Distil. M.	-,-

c. Activities

The student analyses different parameters with respect to soil, plant and water.



Post Graduate student working on Flame Photometer



Post graduate student working on Soxhlet's Apparatus



Post Graduate Students working on AAS



Inside view of Central Instrumentation Centre

d. Photographs of Instruments:





Central Instrumentation Centre





Inside view of CIC

5 Faculty:

a. Academic staff:

	Name of the Faculty	Dr. S. B. Dodake
	Post held	Head
	Date of Birth	01-06-1964
	Qualification	M. Sc.(Ag.)Ph.D.
	Area of Specialization	Soil Fertility and Nutrient Management
	Experience (Years)	34 years
	Research project guided:	
	Ph.D.	07
	M.Sc.	11
	Present area of research	Nutrient Management in vegetable and fruit crops.
	Contact Details	
	LandlineNo.	-
	MobileNo.	94232962274
Email	sureshdodake64@rediffmail.com sbdodake@dbskkv.ac.in	
	Name of the Faculty	Dr. M. C. Kasture
	Post held	Associate Professor & Professor(I/c)
	Date of Birth	27-02-1978
	Qualification	M. Sc.(Ag.)Ph.D.
	Area of Specialization	Soil Fertility and Nutrient management, Artificial Intelligence
	Experience (Years)	15 yrs
	Research project guided:	
	Ph.D.	03
	M.Sc.	15
	Present area of research	Site Specific Nutrient Management (Briquette technology), Spectral Data Analysis, Carbon Sequestration, Nano Carbon.
	Contact Details	
	LandlineNo.	-
	MobileNo.	9421610724
Email	kasturemc@gmail.com mckasture@dbskkv.ac.in	


	Name of the Faculty	Dr.(Smt.) P. S. Sawant
	Post held	Associate Professor (CAS) (Food Nutri.)
	Date of Birth	17/05/1967
	Qualification	Ph.D.(Foods and Nutrition)
	Area of Specialization	Food and Nutrition
	Experience (Years)	22 Yrs.
	Research project guided:	
	Ph.D.	--
	M.Sc.	11
	Present area of research	Food Nutrition, Food Processing
	Contact Details	
	Landline No.	-
	Mobile No.	09850750147
Email	pssawant@dbskkv.ac.in poojasawant@rediffmail.com	
	Name of the Faculty	Dr. N. H. Khobragade
	Post held	Assistant Professor
	Date of Birth	03/01/1974
	Qualification	M. Sc.(Ag.)Ph.D.
	Area of Specialization	Soil Science
	Experience (Years)	18 Yrs.
	Research project guided:	
	Ph.D.	-
	M.Sc.	04
	Present area of research	Soil Fertility and Nutrient Management
	Contact Details	
	Landline No.	-
	Mobile No.	09421610790
Email	nitinkhobragade74@gmail.com nkhobragade@dbskkv.ac.in	




Name of the Faculty	Dr. S. S. More
Post held	Assistant Professor
Date of Birth	01/07/1987
Qualification	M.Sc.(Ag.) Ph.D.
Area of Specialization	Soil Science and Plant Nutrition
Experience (Years)	8 yrs
Research project guided:	
Ph.D.	-
M.Sc.	4
Present area of research	Soil Fertility, Silicon fertilization, GHG emission
Contact Details	
Landline No.	-
Mobile No.	09822891068
Email	sagarmore86@rediffmail.com ssmore@dbskkv.ac.in



Name of the Faculty	Dr. P. G. Ahire
Post held	Assistant Professor
Date of Birth	01/06/1968
Qualification	M.Sc.(Ag.) Ph.D.
Area of Specialization	Soil Science and Plant Nutrition
Experience (Years)	26 yrs
Research project guided:	
Ph.D.	-
M.Sc.	-
Present area of research	Soil fertility
Contact Details	
Landline No.	-
Mobile No.	8275454974
Email	pgahire@dbskkv.ac.in

	Name of the Faculty	Dr. A. A. Dademal
	Post held	Assistant Professor
	Date of Birth	30/03/1977
	Qualification	M. Sc. (Ag.)Ph.D.
	Area of Specialization	Soil Science
	Experience (Years)	20 yrs
	Research project guided:	
	Ph.D.	-
	M.Sc.	-
	Present area of research	Soil Fertility and Plant Nutrition
	Contact Details	
	Landline No.	-
	Mobile No.	7057848856
Email	adademal@gmail.com aadademal@dbskkv.ac.in	

a. **Research staff:** The name of the research staff member like SRA and JRA.

	Name of the Faculty	Shri. A.A.K. Dosani
	Post Held	Junior Research Assistant
	Date of Birth	26/04/1973
	Qualification	M.Sc. (Soil Science)
	Area of Specialization	Organic framing
	Experience (Years)	26 years
	Research Projects guided	
	PhD	-Nil-
	M.Sc./M. Tech	
	B. Tech.	
	Present area of research	DRIS in Cashew Orchards
	Contact details	9028958096
	Land line No.	8275256524
Mobile		
Fax		
Email	aslamdosani2005@gmail.com aadosani@dbskkv.ac.in	

6 Instructional Farm:

- a. **Location:** Farm is located Near Grahak Bhandar of Society, it is mainly preferred for rice cultivation. Approximately 22R area is covered under this farm.
- b. **Infrastructure:** A small 8 x 10 sq. ft. tin shade is located in the farm for storing the small d equipments and fertilizers.
- c. **Activities:** The research activities like departmental research and PG research is being undertaken in this farm. The farm is separated in four portions so that we can conduct different experiments in *Kharif* also on rice. For the other experiments the Department use to conduct experiment other departments farms such as Agronomy, Horticulture, Botany etc.

Activities:

Dr. S.B. Dodake, Head, Department of SSAC and his team of scientists and Ph.D. student initiated the research work on “Split application of fertilizers for improving yield and quality of Alphonso mango”.



7 Research activities and Achievements:

a. Variety/Implements released: ----N.A.----

b. Research Recommendations (Since 2009):

Year	Recommendations
2009	Developed technology of Preparation of Wine from Karonda and Cashew apple fruits
2010	Developed Konkan Annapurna Briquettes (KAB-34:14:06) having better hardness and keeping quality as an alternate to Urea-Suphala briquettes to increase rice yield And to decrease fertility cost.
2011	It is recommended to undertake three multi-nutrient sprays of 0.55 (Urea, SOP, SSPeach) + 0.25% (ZnSO ₄ , Borax, CuSO ₄ , each) + 0.01% (Sodium molybdate), first spray at bud break, second on full bloom inflorescences and third at egg size fruit of Alphonso mango along with recommended dose of fertilizers in lateritic soil of Konkan to obtain maximum yield.
2012	It is recommended to apply silica containing Konkan Annapurna Briquettes (SilKAB) to rice crop for getting higher yield and net returns.
2012	It is recommended to undertake three sprays of 0.25% (Urea, SOP, SSP each) +0.25% (ZnSO ₄ , Borax, CuSO ₄ each) + 0.01% (Sodium molybdate), first spray be given one month before flowering, second at flowering and third at nut setting time of cashew along with recommended dose of fertilizer in lateritic soil of Konkan to obtain Maximum yield and to control yellow leaf spot of cashew.
2013	It is recommended to apply boron @ 4 kg ha ⁻¹ (3.00 g per palm) through the soil Application with recommended dose of fertilizers to reduce the Arecanut cracking in the Konkan region.
2013	Wine can be prepared from ripe Jamun fruits by using technology developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli
2013	On the basis of chemical composition, sensory evaluation of juice and wine and cost of production, it is concluded that the standard quality cashew apple wine can be prepared from the pasteurized juice treated with 250 ppm SO ₂ level (0.43g K.M.S. litre ⁻¹) and stored for 3 month at 12 ⁰ C±2.

2013	Finger Millet based Calcium rich Extrudates can be prepared as per the procedure Developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.
2016	It is recommended to apply 150 per cent RDN along with 4 kg B ha ⁻¹ to Arecanut through fortified Konkan Annapurna Briquette (KAB) to reduce the nut cracking and to get higher yield in konkan region.
2018	It is recommended to apply two sprays of 0.1% CuSO ₄ + 0.05% lime, one at flowering and one at fruit set along with recommended dose of fertilizer in in Cashew lateritic soils of Konkan.
2018	It is recommended to apply 25:60:40 N:P ₂ O ₅ : K ₂ O kg ha ⁻¹ and FYM 5 t ha ⁻¹ along with seed inoculation of <i>Rhizobium</i> and PSB each @ 25 g kg ⁻¹ of seed for obtaining maximum yield and profit of <i>Rabi</i> cowpea in lateritic soil of Konkan region.
2019	It was recommended to apply higher dose of fertilizers 3000:1000:1000 g N:P ₂ O ₅ :K ₂ O tree ⁻¹ along with 50 kg FYM to above 10 year/plant for getting higher yield and B:C ratio in Alphonso mango under lateritic soils of Konkan region.
2019	It is recommended to apply 25:50:30 N:P ₂ O ₅ :K ₂ O kg ha ⁻¹ and FYM 5 t ha ⁻¹ along with seed inoculation of <i>Rhizobium</i> and PSB each @ 20 and 50 g kg ⁻¹ of seed, respectively for obtaining maximum yield and profit of <i>Rabi</i> groundnut in lateritic soil of Konkan region.
2020	It is recommended that the critical limit of Silica found to be 43.43 kg ha ⁻¹ in lateritic soil and 2.6 per cent in rice crops.
2020	It is recommended to apply RDF along with ZnSO ₄ @ 15 kg ha ⁻¹ through soil or Zinc fortified Konkan Annapurna Briquettes (KAB) (34:14:6: 1.23 % N:P ₂ O ₅ :K ₂ O:Zn) to rice at the time of transplanting for getting higher yield and quality in medium black soil of Konkan region.
2021	It is recommended to apply 3 kg of Micronutrient fortified Konkan Annapurna Briquettes (N: P: K: Cu: B: Mo; 33.6: 14: 06: 0.6: 0.26: 0.014 %) and 40 kg FYM per plant in month of June for obtaining maximum yield and profit of cashew in lateritic soils of <i>Konkan</i> .

c. Research Outcome/Findings Photographs of the important recommendations:

भात शेतीत ब्रिकेट्सचा वापर

Use of Briquettes in Rice Cultivation



Urea-Suphala Briquettes

युरिया आणि सुफला (१५:१५:१५) १.५ : १ या प्रमाणात वापरून ब्रिकेट मशिनच्या सहाय्याने गोळ्या तयार करण्याचे तंत्रज्ञानाची शिफारस करण्यात येत आहे. तसेच भात पिकापासून अधिक उत्पन्न मिळविण्यासाठी आणि खतावरील खर्च कमी करण्यासाठी युरिया-डीएपी गोळ्यांना पर्याय म्हणून युरिया - सुफला गोळ्या वापरण्याची शिफारस करण्यात येते.

It is recommended to use Urea and Suphala (15:15:15) in 1.5:1 proportion to prepare briquettes by using briquette machine. Further, application of Urea-Suphala briquette is recommended as alternate source to Urea-DAP briquette for increasing rice crop yield and to minimize fertilizer cost.



Konkan Annapurna Briquettes

भात पिकापासून अधिक उत्पादन मिळविण्यासाठी आणि खतावरील खर्च कमी करण्यासाठी युरिया - सुफला गोळ्यांना पर्याय म्हणून अधिक टणक आणि जास्त काळ टिकणाऱ्या कोकण अन्नपूर्णा ब्रिकेट्स (कॅब-३४:१४:६) गोळ्या वापरण्याची शिफारस करण्यात येते.

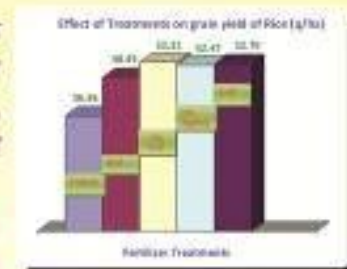
It is recommended to use Konkan Annapurna Briquette (KAB-34:14:6) having better hardness and keeping quality as an alternate to Urea-Suphala briquettes to increase rice yield and to decrease fertilizer cost.



SilKAB

भाताच्या अधिक उत्पादनासाठी आणि अधिक फायदा मिळविण्यासाठी सिलिकायुक्त कोकण अन्नपूर्णा ब्रिकेट्स (३४ : १४ : ६ : ०.४४, नत्र, स्फुरद, पालाश व सिलिका) वापरण्याची शिफारस करण्यात येते.

It is recommended to apply silica containing Konkan Annapurna Briquettes (SilKAB-34:14:6:0.44) to rice crop for getting higher yield and net returns.



फळविके

Fruits Crops



कोंकणातील जांभ्या जमिनीत अन्नद्रव्य व्यवस्थापनासाठी खतांच्या शिफारशीचा अवलंब करून काजूच्या बियांचे अधिक उत्पादन घेण्यासाठी आणि पानावरील पिवळ्या डागांचे नियंत्रण करण्यासाठी ०.२५ टक्के (युरीया, एस.ओ.पी., एस.एस.पी. प्रत्येकी) आणि ०.२५ टक्के (झिंक सल्फेट, बोरॅक्स, कॉपर सल्फेट प्रत्येकी) आणि ०.०१ टक्के सोडियम मॉलिब्डेट यांच्या तीन फवारण्या अनुक्रमे मोहोर येण्याच्या एक महिना अगोदर, मोहोरावर आणि फलधारणेच्या वेळी कराव्यात अशी शिफारस करण्यात येत आहे.

It is recommended to undertake three sprays of 0.25% (Urea, SOP, SSP each) + 0.25% (ZnSO₄, Borax, CuSO₄ each) + 0.01% (Sodium molybdate), first spray be given one month before flowering, second at flowering and third at nut setting time of cashew along with recommended dose of fertilizer in lateritic soil of Konkan to obtain maximum yield and to control yellow leaf spot of cashew.



कोंकणातील जांभ्या जमिनीत अन्नद्रव्य व्यवस्थापनासाठी खतांच्या शिफारशीचा अवलंब करून हापूस आंब्याच्या फळांचे अधिक उत्पादन घेण्यासाठी ०.५ टक्के (युरीया, एस.ओ.पी., एस.एस.पी. प्रत्येकी), ०.२५ टक्के (झिंक सल्फेट, बोरॅक्स, कॉपर सल्फेट प्रत्येकी) आणि ०.०१ टक्के सोडियम मॉलिब्डेट असे अन्नद्रव्ये असणाऱ्या द्रावणाच्या तीन फवारण्या अनुक्रमे काडीची शाखीय वाढ आडळून आल्यानंतर, बहरलेल्या मोहोरावर आणि फळ अंड्याएवढे झाले असतांना करण्याची शिफारस करण्यात येते.

It is recommended to undertake three multi-nutrient sprays of 0.5% (Urea, SOP, SSP each) + 0.25% (ZnSO₄, Borax, CuSO₄ each) + 0.01% (Sodium molybdate), first spray at bud break, second on full bloom inflorescences and third at egg size fruit of Alphonso mango along with recommended dose of fertilizers in lateritic soil of Konkan to obtain maximum yield.



कोंकणातील जांभ्या जमिनीत हापूस आंब्याचे उत्पन्न व प्रत वाढीसाठी शेणखत ५० किलो, नत्र १.५० किलो युरीयाद्वारे, स्फुरद ०.५ किलो सिंगल सुपर फॉस्फेटद्वारे व पालाश १ किलो सल्फेट ऑफ पोटॅशद्वारे प्रती झाडास जून महिन्याच्या पहिल्या पंधरवड्यात द्यावे. तसेच पॅक्लोब्युट्रॉझोल ०.७५ ग्रॅम क्रियाशील घटक प्रती मिटर झाडाचा व्यास विस्ताराप्रमाणे देण्यात यावे व सल्फेट ऑफ पोटॅश ०.९ टक्केच्या तीन फवारण्या फळांचा आकार वाढाणा, गोटी व अंडाकृती असतांना करण्याची शिफारस करण्यात येते.

Under lateritic soil conditions of Konkan region, the application of 50 kg FYM, recommended dose of nitrogen (1.5 kg N), phosphorus (0.5 kg P₂O₅) and potassium (0.1 kg K₂O) through sulphate of potash per tree in first fortnight of June and application of paclobutrazol @ 0.75 g.a.i./m canopy diameter during first fortnight of August with 3 foliar sprays of 0.9% K₂SO₄ (Sulphate of potash) at peanut, marble and egg size fruit to improve the yield and quality of Alphonso mango is recommended.



खार जमीन व्यवस्थापन

KHAR LAND MANAGEMENT



भरतीच्या वेळी समुद्रातील खान्या पाण्याचा शिरकाव समुद्रकाठच्या लागवडी योग्य जमिनीवर होऊन जमिनीची क्षारता वाढत जाऊन कालांतराने या जमिनी पिकाच्या लागवडीस अयोग्य ठरतात. या प्रकारच्या जमिनीस खार जमीन किंवा खाजण जमीन असे संबोधतात.

The coastal saline soils occurs due to periodical inundation of cultivable land by creek/sea water during high tides such periodical inundation render the otherwise fertile soil progressively saline and in time make it completely unfit for growing any crop.



जमीन सुधारणा Reclamation measures उघाडीसह बाह्यकाठ बांधणी.

समुद्रभरतीचे वेळी खाडीच्या पाण्याचे होणारे अतिक्रमण थांबविण्यासाठी खाडीच्या बाजूला पुरेशा उंचीचा बाह्यकाठ बांधावा व लाटांमुळे होणारी झीज थांबविण्यासाठी दगडाचे अस्तरीकरण करुन मॅन्गूव्हची लागवड करावी.

Construction of embankment with provision of sluice gate

A strong embankment is required to be constructed at least to a height greater than the height of maximum tide to stop ingress of sea water. Side slope with stone pitching towards creek side and conservation of mangroves helps in reducing erosion due to waves of sea water.



उघाडी (Sluice gate)



लागवडीच्या पध्दती / Planting Practices -

आटवणी - या पध्दतीमध्ये भात रोपे मातीसहित शेतामध्ये लावण्यात येतात.

Awatni :- Rice seedlings are uprooted along with mudballs intact and are thrown in the field.



रहू - कोंब आलेला भात किंवा रुजवा झालेला भात खाचरामध्ये हलक्या हाताने फोकतात.

Rahu :- Sprouted rice seeds are broadcasted in the field.



क्षार प्रतिकारक भात जातीचा उपयोग

Use of Salt tolerant rice varieties



फळांपासून वाईन निर्मिती

Preparation of wine from fruits

डॉ. बाळासाहेब सावंत कोकण कृषि विद्यापीठाने विकसित केलेल्या तंत्रज्ञानाने काजूच्या बोंडापासून वाईन तयार करण्याची शिफारस करण्यात येत आहे.

It is recommended to prepare the wine from Cashew Apple by using the technology developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.



डॉ. बाळासाहेब सावंत कोकण कृषि विद्यापीठाने विकसित केलेल्या तंत्रज्ञानाने करवंदापासून वाईन तयार करण्याची शिफारस करण्यात येत आहे.

It is recommended to prepare the wine from Karonda fruit by using the technology developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.



d. Different research projects implemented through department :

1	Title:-	Suitability of Factory Waste Water for Rice and Vegetables
	Objectives:	i) To study the effect of factory waste water on growth, yield and nutrient content in rice and vegetable crops. ii) To study the effect of factory waste water on soil properties.
	Name of Principal Investigator:	Dr.S.B.Dodake
	Co-principle Investigator	Dr.N.H.Khobragade Dr.V.G.More
	Sponsoring Agency	Saf Yeast Co. Pvt. Ltd., Gane Khadpoli, Chiplun
	Duration:	Three years (2011-12 to 2013 -14)
	Total Outlay	Rs. 20.13 Lakh
	Summary of Achievements	Considering the yield response and build up of soil fertility, the application of 10 percent factory waste water along with recommended dose of fertilizer was found to be suitable for rice. Among the various vegetables crops studied (Cabbage, Chilli and brinjal) application of 15 percent factory waste water along with recommended dose of fertilizers was found to be suitable for cabbage in lateritic soil of Konkan.
2	Title:-	Studies on Impact of Thermal Power Plant a Mango and Cashew Plantation.
	Objectives:	To study the nutrient status of soil, leaf and fruits of mango and cashew orchards in 10 km radius from Thermal Power Project (JSW Energy Limited, Ratnagiri)
	Name of Principal Investigator:	Dr K. H. Pujari Dr. M. S. Joshi
	Co-principle Investigator	Dr. S.B. Dodake Dr. M.C. Kasture
	Sponsoring Agency	JSW Energy Limited (Ratnagiri),
	Duration:	6 years
	Total Outlay	75 lakh
	Summary of Achievements	The soils of both mango and cashew orchards, were found to be strongly to moderately acidic in nature. The mean pH, Electrical conductivity, Fe, Mn, and Cu values of the soils from mango and cashew orchards were slightly declined after commissioning of the project. The available nitrogen, available phosphorus (P ₂ O ₅), available potassium (K ₂ O) and available sulphur were

		lightly increased after commissioning of the project. The organic carbon, available manganese, nickel, Lead and Arsenic were observed to be normal. The leaf nitrogen, phosphorus and sulphur status of both mango and cashew was optimum. However, there was slight increase in potassium and iron. The arsenic, nickel and lead content of leaves of both mango and cashew remained lower during post commissioning study.
3	Title:-	Bio-efficacy studies of commercial products from PRIVI Life Sciences PVT LTD. On various crops
	Objectives:	<ol style="list-style-type: none"> 1. To study the effect of Privi Life Sciences products on growth and yield of crops 2. To study the effect of Privi Life Sciences products on soil properties 3. To study the effect of Privi Life Sciences products on disease and pest
	Name of Principal Investigator:	Dr. S. S. More
	Co-principle Investigator	Dr. R. V. Dhopavkar Dr. M. R. Wahane Dr. S. S. Pinjari Dr. V. A. Rajemahadik Dr. Y. R. Parulekar Dr. N. V. Dalavi Dr. S. N. Kale Dr. B. D. Shinde Dr. J. J. Kadam Dr. R. R. Rathod Dr. D. N. Jagtap
	Sponsoring Agency	Privi Life Sciences Pvt Ltd, Mumbai
	Duration:	Two Years
	Total Outlay	34.20 Lakh
	Summary of Achievements	Nine different biostimulant and PGR based products were used on different three crops at three locations. It was observed that, when biostimulants applied along with recommended fertilizer doses it improved not only yield and quality of crop but also improves the stress resistance.
4	Title:-	Bio-efficacy studies of commercial products from Ajay Biotech (IND), Baner. On various crops
	Objectives:	<ol style="list-style-type: none"> 1. To study the effect of Ajay Biotech products on growth and yield of crops 2. To study the effect of Ajay Biotech products on soil properties 3. To study the effect of Ajay Biotech products on disease and pest
	Name of Principal Investigator:	Dr. M. C. Kasture
	Co-principle Investigator	Dr. A. V. Mane Dr. S. S. More Dr. N. V. Dalavi
	Sponsoring Agency	Ajay Biotech (IND), Baner
	Duration:	Two years

	Total Outlay	25.99 lakh
	Summary of Achievements	Eight different biostimulant and PGR based products were used on different two crops at Dapoli. It was observed that, when biostimulants applied along with recommended fertilizer doses it improved not only yield and quality of crop but also improves the stress resistance.
5	Title:-	Spectroscopy based analysis of nutrients of alphonso mango for validation with the laboratory analysis.
	Objectives:	To estimate foliar and soil nutrient status under mango crop by using spectroscopy.
	Name of Principal Investigator:	Dr Manish C Kasture
	Co-principle Investigator	Dr. S. S. More Miss. Nutan Shinde (M.Sc. Student)
	Sponsoring Agency	RGST
	Duration:	Two years
	Total Outlay	5.00 Lakh
	Summary of Achievements	Project started in the month of September 2022 for the spectral images and wet analysis. Due to the technical issues with the IR Spectroscopy samples were not collected and the sampling was done in the month of May after harvest of the mango crop and with clear climatic factors. The leave samples and soil samples collected for spectral images and the same samples were analysed by wet analysis method for validation of the spectral analysis.
6	Title:-	Supplementation of modified Amrashakti multi nutrient solution through foliar application for improving the yield and quality of Alphonso mango (<i>Mangifera indica</i> L.)
	Objectives:	<ol style="list-style-type: none"> 1. To modify the Amrashakti multi nutrient formulation. 2. To improve flowering and fruit retention of mango through foliar application of nutrients. 3. To study the effect of foliar application on soil properties and leaf nutrient content. 4. To study the effect of foliar application on yield and quality of fruit
	Name of Principal Investigator:	Dr. S. V. Deshmukh
	Co-principle Investigator	Dr. S. S. More Dr. S. N. Kale Dr. J. J. Kadam Miss. Dipika Patil (M.Sc. Student)
	Sponsoring Agency	RGST
	Duration:	Two years

	Total Outlay	5.00 Lakh
	Summary of Achievements	The compatibility of multinutrient solution was tested for various combination and various 8 compatible solutions was obtained and was applied on mango crop with comparison to previous Amrashakti. It was observed that, significant yield differences were found with the previous and modified Amrashakti.
7	Title:-	AICRP on Salt Affected Soil and Use of Saline Water in Agriculture voluntary centre at KLRs, Panvel
	Objectives:	<ol style="list-style-type: none"> 1. Assessment of soil properties of coastal region. 2. Development of IFS model 3. Assessment of ground water qualities 4. Suitability of saline water for irrigation
	Name of Principal Investigator:	Dr. K D Patil (August, 2014 to May, 2017) Dr S B Dodake (May, 2017 to June, 2020) Dr K P Vaidya (July, 2020 till date)
	Co-principle Investigator	Dr M R Wahane Dr P B Wanave
	Sponsoring Agency	CSSRI, Karnal
	Duration:	Since, 2014
	Total Outlay	5 lakh
	Summary of Achievements	<ul style="list-style-type: none"> ➤ Monitored soil salinity, soil properties from sea or creek side to land side and the chemical composition of ground water in coastal area of the Konkan region. ➤ Developed two Integrated Farming system models on the farmer's field in Vashi and Koproli villages. Following are the compounds of IFS models <ul style="list-style-type: none"> Crops: <ul style="list-style-type: none"> Kharif- Rice Rabi- Brinjal/Watermelon/Wal/Cowpea Horticultural Crops: <ul style="list-style-type: none"> Coconut, Sapota, Spices Animal Components: <ul style="list-style-type: none"> Poultry, Fish farming((Ponds), Organic recycling: <ul style="list-style-type: none"> Vermicompost, Kitchen garden ➤ The Spinach showed more tolerant than Dill while radish was the most tolerant among three crops. The Spinach and Radish gone B:C ratio above 2 at irrigation water salinity 8 dSm⁻¹ while it was 0.95 for Dill. It is suggested that Spinach and Radish should be given preference over Dill under coastal saline condition.

OTHER COMPLETED RESEARCH PROJECTS		
8.	Title:-	Project was sponsored by RCF Ltd, Mumbai on Rice Nursery Management
9.	Title:-	Project was completed on reclamation of Acid soil and characterization of acid sulphate.

e. Ongoing Research Projects/Programmes/Schemes:

1)	Effect of biochar application on yield, nutrient content of watermelon and physico chemical properties under alfisols of <i>Konkan</i> region
2)	Studies on efficacy of organics through soil and foliar application on soil properties and yield of chilli (<i>Capsicum annuum</i> L.) in lateritic soil
3)	Effect of plant available silica on growth and yield of rice crop in soils of <i>Konkan</i> region
4)	Use of different carbon sources on curcumin content and yield of turmeric (<i>Curcuma longa</i> L.) in Lateritic soils of <i>Konkan</i> region
5)	Effect of NPK levels on soil properties, yield, quality and nutrient uptake by cluster bean in lateritic soils of <i>Konkan</i> region.
6)	Characterization and classification of soils of mango growing region in Devgad Tahsil.
7)	Quantification of methane emission from paddy field
8)	Effect of micronutrient fortified briquettes on yield of brinjal and soil properties.
9)	Split application of fertilizer in mango

8 Abstract of the thesis:

The compendium of the thesis abstract of the PG students of the Department has been prepared and is available in the Department.

9 Extension Activities:-

a. Training Programme organized by the Department of Soil Science and Agril Chemistry:

Sr. No.	Training Programme Details
1.	Soil testing training during 02 nd February 2016 to 06 th February 2016
2.	Soil testing training during 05 th January 2017 to 07 th January 2017
3.	Soil testing training during 11 th January 2017 to 13 th January 2017
4.	Soil testing training for Testing Laboratory Staff during 01 st February 2018 to 06 th February 2018
5.	Soil testing training for Testing Laboratory Staff during 21 st January 2019 to 25 th

	January 2019
6.	Soil testing training for Testing Laboratory Staff during 01 st January 2020 to 05 th January 2020
7.	Training programme of newly appointed Agril. Assistant on Vermicomposting during 28 th November 2019 to 30 th November 2019
8.	Brain Storming session on Soil Health of North Konkan Region and future strategies of research on 11 th January 2019
9.	Brain Storming session on was conducted on 26 th November, 2020 under the chairmanship of the Hon. Vice Chancellor Dr S. D. Sawant to finalize the “Frontier Research in Soil Science”.
10.	Agriculture Department-Corporate-farmer triangular interface to meet the actual needs of the farmers on 16 th December, 2021 at Sir Vishweshvarayya Hall, DBSKKV, Dapoli

b. Organization of Seminar/Conference/Webinar by the Department of Soil Science and Agril Chemistry:

Year	Theme of the Seminar / Webinar
1991	56 th Annual Convention of Indian Society of Soil Science on Advances in Soil Science was organized during 12 to 15 December, 1991
1997	State Level Seminar was organized on Nutrient Management in Agriculture during 5-6 March, 1997
2002	State Level Seminar was organized on Land Resource Management for Food Security and Permanency during 5-6 January, 2002
2006	State Level Seminar was organized on Soil Health Improvement for Food Security during 22-23 December, 2006
2010	Organised National Symposium on Recent Outlook on Sustainable Agriculture, Livelihood Security and Ecology of Coastal Region (by Dapoli Chapter of ISCAR)
2011	State Level Seminar on Soil Health, Sustainability and Food Security during 21 st and 22 nd January, 2011
2013	Organised 24 th Dr. S. P. Raichaudhary Memorial Lecture in 2013 at DBSKKV, Dapoli delivered by Dr Jagdish Prasad, Principal Scientist, NBSS & LUP, Nagpur

2013	National Seminar on “ Soil fertility, Degradation and Contaminants ” during 8 th and 9 th May, 2013
2015	One day workshop on “ Soil Science and Agril. Chemistry Education-Retrospect and Reforms ” on 1 st May, 2015
2015	National symposium on Soil and Water: Finite resources – care them during 15 and 16 December, 2015 at DBSKKV, Dapoli
2016	State level seminar on Development in Soil Science: Climate change and its influence in natural resource management during 22 and 23 September, 2016 at DBSKKV, Dapoli
2018	National Symposium on Coastal Agriculture: Boosting Production Potential under Stressed Environment during 28th Sept to 1st Oct, 2018
2020	Brain Storming session on was conducted on 26 th November, 2020 under the chairmanship of the Hon. Vice Chancellor Dr S. D. Sawant to finalize the “Frontier Research in Soil Science”.
2020	Online World Soil Day was celebrated on 5 th December “Soil Health”.
2021	11 th R S Murthy Memorial Lecture was organised on 11 th October, 2021 delivered by Dr A. S. Dhawan, Vice Chancellor, PDKV, Akola
2021	World Soil Day was celebrated in the Mugij village on 5 th December, 2021 and 65 SHC was distributed to the farmers.
2021	Organised state level seminar Soil Health and Climate Resilience: Need for Sustainable Agriculture during 15 and 16 December, 2021 at DBSKKV, Dapoli
2022	Organised 28 th D P Motiramani Lecture on 12 th October, 2022 at DBSKKV, Dapoli delivered by Dr V K Kharche, Director of Research, PDKV, Akola
2022	Celebrated World Soil Day a with various demonstrations of rapid soil testing kits on 5 th December, 2022 and guest speaker was Dr H K Kausadikar, Director (Research), MCAER, Pune
2023	Participated and exhibited the technologies recommended by the Department in the State level Exhibition at Aurangabad during 1 st to 5 th January, 2023 and at Alibag during 7 th to 10 th January, 2023

c. Organization of Farmers Melawa

Year	Theme of the Seminar / Webinar
2016	Farmers exhibition was organised during 22 and 23 September, 2016 at DBSKKV, Dapoli
2018	Farmers exhibition was organised during 28th Sept to 1st Oct, 2018
2021	Farmers exhibition was organised during 15 and 16 December, 2021 at DBSKKV, Dapoli
2023	Participated and exhibited the technologies recommended by the Department in the State level Exhibition at Aurangabad during 1 st to 5 th January, 2023 and at Alibag during 7 th to 10 th January, 2023

d. Radio/TV talks delivered by the staff members of the Department:

Sr. No.	Title of the subject	Authored by	Year
1	Use of balanced chemical fertilizer in Agriculture	Dr S. B. Dodake	1997
2	Fertilizer management in vegetable production	Dr S. B. Dodake	1997
3	Integrated Nutrient Management in vegetables	Dr. S. S. Prabhudesai	2014
4	Organic Farming	Dr. M. C. Kasture	2015
5	Nutrient management of Kharif crops	Dr S. B. Dodake	2015
6	Fertilizer management in rice crop	Dr S. B. Dodake	2016
7	Briquette technology in rice	Dr. M. C. Kasture	2017
8	Importance of Vermicomposting	Dr. R.V .Dhopavkar	2017
9	Rice production management in Kharland	Dr S. B. Dodake	2018
10	Role of Silicon in rice	Dr S S More	2018
11	Fertilizer management in rice under Kharland	Dr S. B. Dodake	2019
12	Use of Briquette in pulse production	Dr. M. C. Kasture	2022
13	Use of Briquette in vegetables production	Dr. M. C. Kasture	2023
14	Integrated Nutrient management in mango	Dr. S. B. Dodake	2023
15	Use of Green manuring in crop production	Dr. S. S. More	2023

g. Publications of the Department:

A. No .of instrumental material and practical manuals developed

Degree	Total no. instrumental material and practical manuals developed
B.Sc. (Agri.)	6
B.Sc. (Hort.)	5
B.Sc. (For.)	2
B.Tech.	1

B. Publication of Leaflets / Bulletins :-

Sr.No.	Name of Leaflets/ Bulletins published in Marathi	Year
1	How to Prepare Compost	2002
2	Vermicompost	2003
3	Gliricidia	2005
4	Soil Testing– its importance and fertilizer recommendation	2006
5	Organic Farming	2008
6	Coastal Saline Soils of Konkan	2008
7.	Compendium of the Post Graduate Students Thesis Abstract	2013
8.	Compendium of PG research 1998-2018	2018
9.	Bulletin on Soils of Konkan	2018

C. Publication of Books authored by faculty member:-

Sr. No.	Name of Book published	Authored by	Year
1	Coastal Saline Soil (in Marathi)	Dr. V. B. Mehta	2002
2	Organic Manures (in Marathi)	Dr. S. C. Talashilkar	2002
3	Properties of Soils, Their Problem sand Measures (in Marathi)	Dr. K. D. Patil	2003
4	Spices (in Marathi)	Dr. S.C. Talashilkar & Dr. D.S. Bagade	2004
5	Sustainable Agriculture (in Marathi)	Dr. S.C. Talashilkar	2005
6	Earthworms in Agriculture(in English)	Dr. S.C. Talashilkar & A.A.K.Dosani	2006
7	Four Chapters(3,4,19and21) in book entitled “भातशेती आणि प्रक्रिया उद्योग”	Dr. S.S. Prabhudesai	2007
8	Organic Farming Systems and Certification (in Marathi)	Dr. R. V. Dhopavkar, A.A.K .Dosani & Dr. S. C. Talashilkar	2011
9	Soil, Water Testing and Fertilizer Management (in Marathi)	Dr. N. H. Khobragade & B. L. Ayare	2012
10	Micronutrients (in Marathi)	Dr. N.H. Khobragade & B.L. Ayare	2012

10 Contact information:

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11 News and Events:-



28th Dr. D. P. Motiramani Memorial Lecture delivered by Dr. V. K. Karche



Celebrated World Soil Day 2022 on 5th December. The guest speaker was Dr H K Kausadikar, Director (Res.) MCAER, Pune



Celebrated World Soil Day 2022 on 5th December.



Organised group discussion on nutrient management in plantation crops



Organised soil testing training programme



Organised visit to Borosil R&D Plant, Pune



State Level Seminar Organised by DCISSL



Organised soil testing training programme