Dr. V. M. Bhale

Vice -Chancellor

Dr. Panjabrao Deshmukh Krishi Vidyapeeth,

(An Agricultural University)

Akola (MS) India

The University is named after the Great Philanthropist of Vidarbha Region and the first Union Agriculture Minister

"I have deep respect for Indian farming and farming community. In my view further, it is the ultimate wealth producer. Their sincerity, efforts, inbuilt kindness within them and love for the nation is incomparable. Frequently, I have experienced it".

Late Dr. Panjabrao alias Bhausaheb Deshmukh

Jurisdiction of University

Characteristics	Zonalization of Vidarbha on the Basis of Rainfall and Cropping Pattern			
	Assured rainfall (Western Vidarbha Zone)	Moderate and moderate to high rainfall (Western Vidarbha Zone)	Moderate rainfall (Central Vidarbha Zone)	High rainfall (Eastern Vidarbha Zone)
Annual precipitation range (mm)	700-900	1100-1200	950-1250	950-1700
Broad soil group and physiography	Vertisols of varying depth	Soils on slopes and hills	Vertisols of varying depth	Primarily vertisols, more plains
Cropping system (s)	Soybean, Cotton, Sorghum	Minor millets and pulses	Soybean, Cotton, Sorghum	Predominates . Paddy followed by

Agroclimatic Zones of Vidarbha

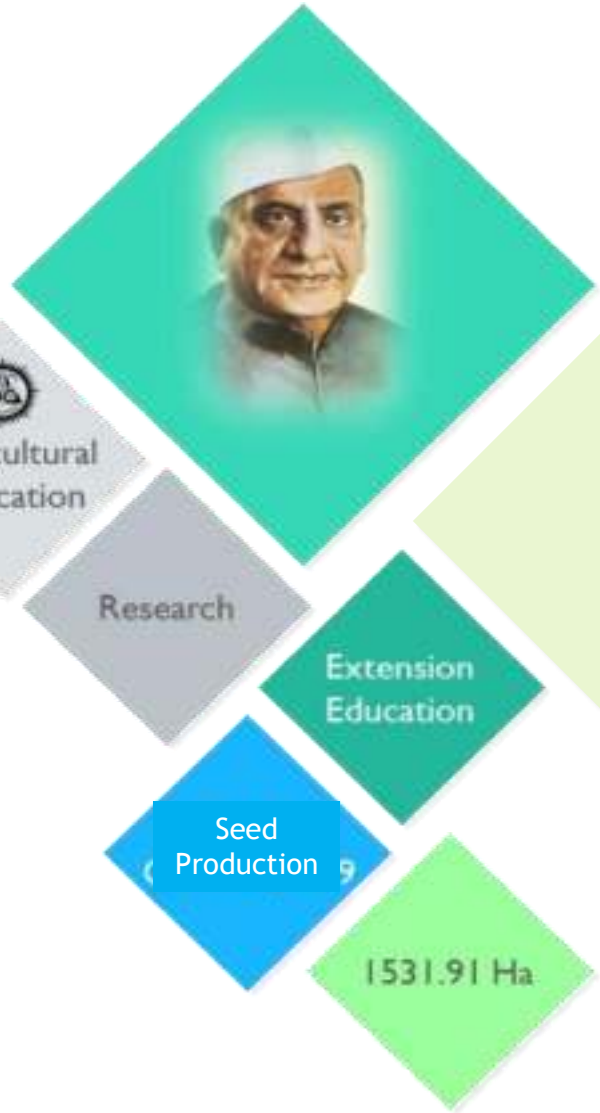
Challenges in Indian Agriculture

- Heterogeneous soil
- Uncertain rains and diverse climate
- Scare surface water and limited ground water
- Mono-cropping and imbalanced nourishment
- Declining soil carbon and fertility
- Improper land use pattern
- Lack of farming system approach
- Biotic and Abiotic stresses
- Shrinking farm size
- Problematic soils

Dr. PDKV., Akola : New horizons for conquering greater heights

- Quality Education for Professional Competence
- Skill Development
- Entrepreneurship Development
- Need based Research
- Dissemination of Technologies
- Quality Seed Production

Historical background and Mandates [Estd: 20th October,1969]



College of Agri., Gadchiroli

Vision, Mission and Goals of University

VISION

- ✓ **Horizontal expansion of education**
- ✓ **Student centric programmes : Pertaining to academic excellence by nurturing the talents of the students and shaping their careers.**
- ✓ **Skill development and Agri- entrepreneurship of the students by Student READY Programme, AIA programme and different modules.**

MISSION

The mission of the Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola is strongly committed in absorbing newer paradigms and using them to develop outstanding human resource, innovative technologies and their dissemination so as to serve the farming community of the State and the Country.

GOALS

The University provides better facilities for education in agriculture and allied fields. The goals of the University have three folds.

- ✓ To train persons in different faculties and equip them for dissemination of knowledge in agriculture and allied sciences.
- ✓ To carry out research for improving agricultural productivity in the influenced area.
- ✓ To educate farmers through various extension programmes e.g. TV, Radio, Field demonstrations, Rallies, Exhibitions, Helpline, Kisan Call Centre for inducing them to adopt advanced practices.

Educational amenities

- ✓Under graduate, Post Graduate and doctoral Degree Programme in Agriculture, Horticulture, Agricultural Engineering, Forestry, Food Technology and Agricultural Biotechnology
- ✓Three times Recipient of highest “Junior Research Fellowship”
- ✓International Educational Programme
- ✓Skill oriented educational programmes
- ✓Enough experimental fields

Interdepartmental Linkages

78 collaborative MoU's for education, research and extension education.

- **International :11**
- **National : 23**
- **State/ Regional : 44**

LIBRARY

- ✓ **Biggest library in India having 150151 books**
- ✓ **87 periodicals are also available in the library**
- ✓ **Electronic databases, online journals and e-books in relevant disciplines.**
- ✓ **University Library is fully Wi-Fi enabled**

Main Building

Stoking Room

Reading Room

Services available at Library

University Library use to provide the following services to its clientele.

Traditional Services	Computerized services
Reference & Information services.	Consortium for e-resources in agriculture (CeRA) (http://www.jgateplus.com) more than 3,966 Online journals.
Lending services.	Krishikosh Repository (83000 digital items are available. (http://krishikosh.egranth.ac.in/)
Reprography service.	Online databases Search Services (more than 6288 titles for searching)
Bibliographical services.	Web Online Public Access Catalogue (OPAC)
Current Awareness Services.	CD-ROM Database Search Services
Selective Dissemination of Information Service	Internet Search Facility
News Paper Clippings services.	Current Awareness Services (new arrivals)
Inter-Library-Loan Services.	Online Document Delivery Services
Document Delivery Services.	WEB OPAC

Accommodation facilities

Sahyadri Hostel M. Sc. & Ph. D. Boys, Akola

Satpuda Hostel for M. Sc. boys Student, Akola

Narnada Hostel M. Sc. & Ph. D. Boys,Akola

Boys Hostel COA, Gadchiroli

Savitri Girls Hostel for M. Sc., Akola

Jijau Hostel for UG Girls all faculty, Akola

International Students Hostel

The Students have been provided following facilities for each student.

- **Living Room**
- **Air Conditioned Bed Room**
- **Kitchen**
- **Television with Dish Connection.**
- **Internet Connections (Wi-Fi)**
- **Students from Vietnam, Afghanistan, Bhutan, United States, Egypt have completed their studies**

Students Hostels

Availability of students hostel at different colleges

SN	Name of the Hostel	Total rooms	Capacity of Hostel
	Akola campus		
1.	Jijau Hostel for UG Girls all faculty	60	120
2.	Savitri Girls Hostel for M. Sc.	50	125
3.	Rukhmini Hostel for Ph. D. Girls	24	48
4..	Shivneri A Block For B. Sc. Agril Boys	52	110
5.	Shivneri A Block B. Sc. Hort. boys	10	20
6.	Shivneri B Block for M. Sc. Boys	61	122
7.	Forestry Hostel for B. Sc. Forestry Boys	14	42
8.	Engineering Hostel for B. Tech. Boys	70	140
9.	Satpuda Hostel for M. Sc. boys Student	31	62
10.	Narnada Hostel M. Sc. & Ph. D. Boys	27	54
11.	Sahyadri Hostel M. Sc. & Ph. D. Boys	19	38
12.	Ph. D. Hostel Boys	22	30
13.	International Hostel for UG, PG, Ph. D. outside country students	11	22
	Nagpur Campus		
14.	Undergrduate boys Hostel -2	114	328
15.	Post Graduate boys Hostel-1	110	220
16.	Undergrduate Girls Hostel -2	54	230
	Yavatmal Campus		
17.	Undergrduate boys Hostel -1	28	84
18.	Undergrduate Girls Hostel -1	28	84
	Total		**1879**

College of Agriculture, Nagpur

The college is declared as " Heritage of India"

- Established in 1906,
- One of the oldest college established during British Empire
- Placed in Heart of city
- The only college operating Zoo

Accommodation facility at Nagpur

	At Nagpur	Intake	Rooms	Students
1	Boys Hotel(3:UG-2 &PG-1)	280	140	420
2	Girls hostel(2: UG-1 &PG-1)	128	64	170

Zoo & Gardens Operated by University at Nagpur

National Agricultural Higher Education Project (Innovation Grant)

(Sponsored by Indian Council of Agricultural Research, New Delhi with support of World Bank)

- ✓ Linkage between industries and alumni's for better placement opportunities for students
- ✓ To up-grade the skill and knowledge.
- ✓ Grant sanctioned Rs. 5.00 Crores
- ✓ Two trainings conducted

Incubation Center/Start up units/ Venture capital

- ✓ Biocontrol agents and bio-pesticides are being mass multiplied and made available to farmers
- ✓ Production and supply of quality planting material of fruit crops, seeds of vegetables and spices
- ✓ Biofertilizers production Unit
- ✓ Tissue culture Unit
- ✓ Recently, R-ABI Agribusiness Incubator under RAFTAAR (Sponsored by Ministry of Agriculture and Farmers Welfare, Government of India) is under consideration.

Incubation Center/Start up units/ Venture capital.....

HOT on production unit of Bio-agents and bio-pesticides at Bio-control Laboratory, Department of Agriculture Entomology, Akola

Acrediation- 2018

Center of Biotechnology, Akola

Awards of University Faculty

Dr. V. M. Bhale, honoured as ISA Fellow by Indian Society of Agronomy, ICAR new Delhi during 3rd international Agronomy Congress

Received First Prize In Poster Presentation in 21st National Conference of Agricultural Economics During 25th -26th OCT, At Goa.

ICAR Best Teacher Award to Dr. S. S. Wanjari on 5/2/2014 in University Convocation

Dr. S.C. Nagpure, AP, Agril. Economics has received the ICAR Best Teacher award during convocation of university held on 5th February 2015

Dr. S. R. Kalbande received Eminent Engineer Award of Institution of Engineers, Amaravati Local Centre

Awards of University……

PM Award for Excellence in Public Administration (CROPSAP)

Dr. S. R. Kalbande, PI, NAHEP winner & received 3rd Prize in Innovation in Agriculture in Startup India Maharashtra Yatra-Award

Dr. V.M Bhale, Krishi Gaurav Puraskar

Research Footprints

- Technologies Developed : 1376
- Varieties Developed and Released : 169
- Ground nut TAG 24, Blackgram TAU 1, Gram JAKI 9218 and Sorghum PKV Kranti are released / recognized at national level
- Farm Implements: 23

Research Avenues

Projects operated under National aids

- 25 AICRP Projects
- 03 NAIP Projects
- 13 ICAR Funded Projects
- 04 Projects under NHM (State)
- 04 Projects under RKVY
- Many others

Projects operated under International aids

- Research Institute of Organic Agriculture (Organic cotton)
- Project under Indo-Israil collaboration (For Citrus)

Horticulture Research

Varieties released with 160 recommendations for production technology

Fruit crops	Nagpur mandrain, Nagpur Seedless mandarin, PKDV Nagpur Santra, Katol Gold of sweet orange, PDKV lime, PDKV Charkradhar, PDKV, Bahar, PDKV Trupti of acid lime and Akola Smruti of tamrind .
Vegetables crops	Aruna and AKLB-9 (Brinjal), Dasara and Deepali (Dolichos bean), Jayanti, Surakta and PDKV Hirakani (chilli), PDKV Waigaon (Turmeric) Akola Safed (onion) , Akola Bahar and PDKV Pragati (okra)
Flower Crops	PDKV Ragini (Chrysanthemum), PDKV Roshni (Gaillardia), PDKV Gold (Gladiolus), Bijli Super (Annual Chrysanthemum)

Acid Lime: PDKV-Trupti

Lima Bean - AKLB 2

Chrysanthemum-PDKV Ragini

Gladiolus- PDKV Roshni

Agricultural Processing and Value Addition

PKV Mini Dal Mill: Step towards entrepreneurship development

- ✓ Dal recovery was about 17 – 20 % over the conventional technology besides decrease in losses.
- ✓ Increased earning ranging from Rs. 35,250/- to Rs. 1,85,500/- per dal mill per annum.
- ✓ All this resulted in significant socio–economic upliftment of the entrepreneurs.
- ✓ The PKV Mini Dal Mill technology has been transferred to 11 manufacturers for making it available on commercial basis.
- ✓ Up till now, they have sold more than 1000 units.

FARM IMPLEMENTS

PKV SELF PROPELLED PNEUMATIC PLANTER

PKV TRACTOR OPERATED SLASHER

PKV SELF PROPELLED INTER ROW CULTIVATOR

PKV POWER TILLER

PDKV deseeding machine for custard apple

Important Features

- ✓Capacity of machine: 80-90 kg pulp /h
- ✓De-seeding Efficiency : 96-98 %
- ✓Power requirement : 0.5 hp single phase motor

Technology resulted in:

- ✓ **Area Expansion**
- ✓ **Custard apple growers association**
- ✓ **Export Potential**
- ✓ **125 Units are established**

Custard apple fruit

Good quality flakes

International Collaboration

SN	Universities/Institutes/Agencies with whom the MoU's signed	Subject of MoU	Year / date of execution of MoU
1.	Texas Tech University, Lubbock, USA	An alliance between the institutions with regard to academic programmes and research activities such as International exchange of faculty and students, research data and educational and development programmes	December 05, 2014
2.	Namangan State University, Republic of Uzbekistan	Exchange of scientists, exchange of Ph.D. students, internship and joint degree programme, co-operation of International programme	2014
3.	Institute of Genetics and Plant experimental biology, academy of sciences republic of Uzbekistan	Exchange of scientists, exchange of Ph.D. students, internship and joint degree programme, co-operation of International programme	2014
4.	The International Centre for Research in Agroforestry, Nairobi, Kenya	Collaborative International Research project on Agroforestry	November 21, 2014
5.	The Research Institute of Organic Farming (FiBL) Ackerstrasse, Postfach CH-5070 Frick, Switzerland	Education and Research	November 05, 2017
6.	American Biographical Institute , USA	Exchange of research programmes Internationally	2001-2017 (Continued)
7.	Wolkite University, Ethiopia	To foster collaborative research and participating faculty exchange programme consultancy, project funding, resources mobilization and generation and funding from Govt. AICTE, Semi Govt organization etc. organizing workshop, seminar, conferences in collaboration and interdisciplinary interaction.	February, 22, 2018
8.	University of Debrecen, Hungary	Exchange of students and faculties and mutual transfer of agricultural technologies	March 13, 2018
9.	University of Copenhagen, Denmark	Exchange of students and faculties, academic co-operation i.e. fellowship and exchange of research etc.	2018

Outreach Programmes of University

University has initiated programmes for betterment of farmers in Vidarbha region

- Kirtankar / Pravachankar Melawa (Religious discourse)
- Sarpanch Melawa (Village Leader)
- Demonstrations / On farm trials
- Experiments on farmers fields
- Farmers Club
- Mahila Melawa (Women Workshop)
- Pre Monsoon Kharif Melawa
- Shivar Pheri (Field Trip)
- State level Exhibition (Covering each district every year)

PDKV Initiative towards "Organic Agriculture"

Centre for Organic Agriculture Research and Training (COART)

- ✓ Since 2010, first ever skill development Certificate Course on Organic Agriculture.
- ✓ 84 students successfully completed engaged in various business of organic agriculture.
- ✓ Established on 26th January, 2015
- ✓ Government of Maharashtra released grants
- ✓ Rs.5.00 crore for research and training on organic agriculture.
- ✓ Training to stakeholders of organic agriculture.
- ✓ Model training course to Agriculture Department Functionaries and Farmers

Centre for Organic Agriculture Research & Training

Mandate

To instigate research, teaching and extension activities on organic agriculture through multidisciplinary approach and to comprise production and quality assessment of bio inputs and organic products.

Objectives

- **To develop specific organic production technologies for crops and cropping system for sustainable production**
- **To provide syllabus and curriculum for organic agriculture**
- **To conduct basic, applied and strategic research on organic agriculture**
- **To analyze the different composting methods for crop residue management.**
- **To demonstrate methodology of organic agriculture production technology and farm advisory services.**
- **To propagate knowledge through extension programmes and to transfer the technologies for effective adoption in organic agriculture.**

World Organic Scenario

- In the world 179 countries and **57.8** million hectares area report organic farming activities.

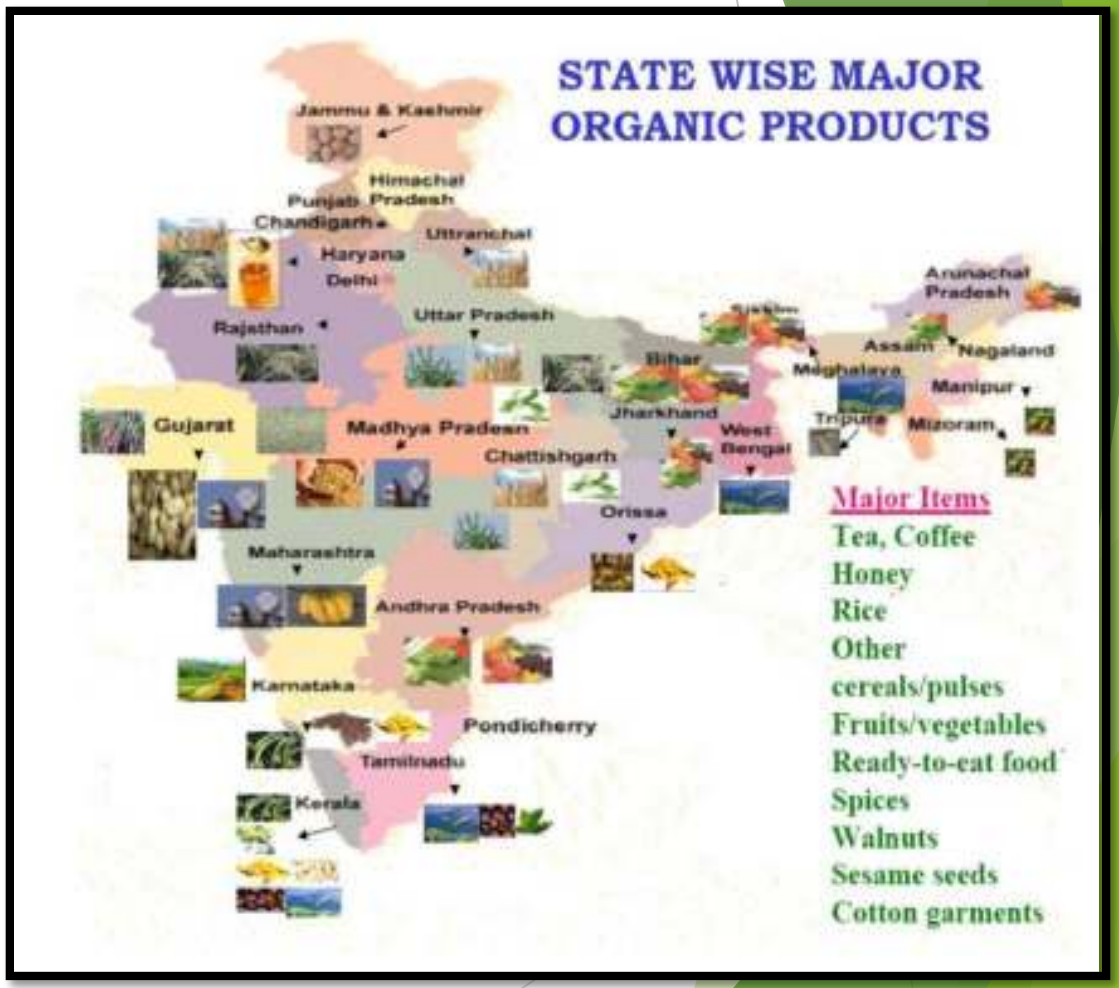
PRESENT STATUS OF ORGANIC AGRICULTURE IN INDIA

Total area under Organic Cultivation (Including wild harvest)	3.56 million hectares
Total area under certified organic cultivation	1.18 million hectares
Total number of certified products	More than 200
Total production	1.70 million MT
Total quantity exported	4.58 lakh MT
Value of total export	515 million USD (Rs 3453 crore)

Source : APEDA (2018)

Top ten states adopting organic farming in India

State	Production (MT)
Madhya Pradesh	3,21,964
Karnataka	2,54,761
Maharashtra (III)	**2,17,323**
Gujarat	60,626
Rajasthan	60,117
Uttar Pradesh	50,299
Orissa	28,972
Uttarakhand	23,714
Tamilnadu	17,598
Jammu & Kashmir	14,824



Source : APEDA (2018)

Initiatives for Organic Agriculture in India

- Government of India declared “Sikkim” as Organic Agriculture State
- Government of Maharashtra Initiated “Dr. Panjabrao Deshmukh Organic Agriculture Mission” with outlay of Rs. 100 Crore (14 Million USD)
- Government of Maharashtra Introduced “Organic Farming Research and Training Centre” at four Agricultural Universities in MS
- Government of Maharashtra has sanction Rs. 5.0 Crore to each University
- Central Government of India started Pradhanmantri Krishi Vikas Yojana (Prime-minster Agriculture Development Scheme)

Centre for Organic Agriculture Research and Training

PDKV Compost

Long term Experiment

FiBL Scientist visit

Botanicals Pesticide

Farmers Training

ELM on OF

Biological Control of Pink Bollworm Management

Farmer's Field Demonstrations on Trichocards

Inclusion of New ELP Modules on Organic Farming Production Technology

Experiential learning modules on organic farming have been prepared and implemented in VIII Semester of UG from the academic year of 2016-17.

Hands on Training at Centre for Organic Agriculture Research and Training

- ✓ Centre for organic Agriculture Research and Training was started at Department of Agronomy, Dr.PDKV, Akola during the year 2014-15
- ✓ Organic Module started by Department for VIII Semester students of B.Sc. Agriculture
- ✓ A separate Centre for Research & Training on Organic Agriculture is functional since 2017 at Dr.PDKV, Akola for strengthening the research activities and promotion of organic agriculture

Findings of organic practices with Deshi Cotton ……

Mean SCY, GMR,COC, NMR and BC ratio as influenced by various organic manures on Arboreum cotton (AKA-8)

Treatments	Pooled SCY Kg ha^{-1}	Gross returns (Rs/ha)	Cost of cultivation (Rs/ha)	Net returns (Rs/ha)	SYI
T_1 : 5 t FYM ha^{-1}	1248	56952	28713	28239	0.50
T_2 : 2.5 t Vermicompost ha^{-1}	1279	58393	38114	20279	0.49
T_3 : 10 t FYM ha^{-1}	1457	66499	34156	32343	0.56
T_4 : 5 t Vermicompost ha^{-1}	1387	63330	52842	10488	0.52
T_5 : In situ green manuring of sunhemp	1254	57252	27846	29406	0.52
T_6 : Castor cake @ 500 kg ha^{-1}	1523	69505	37899	31606	0.58
T_7 : RD of nutrient through organic based on P equivalent basis (5t FYM) + GM sunhemp	1257	57376	29752	27624	0.50
T_8 : Control	673	30709	14500	16209	0.17
Azo +PSB + Trichoderma seed treatment to T1 to T7					

Table : Influence of organic sources on Soil fertility (six years experiment)

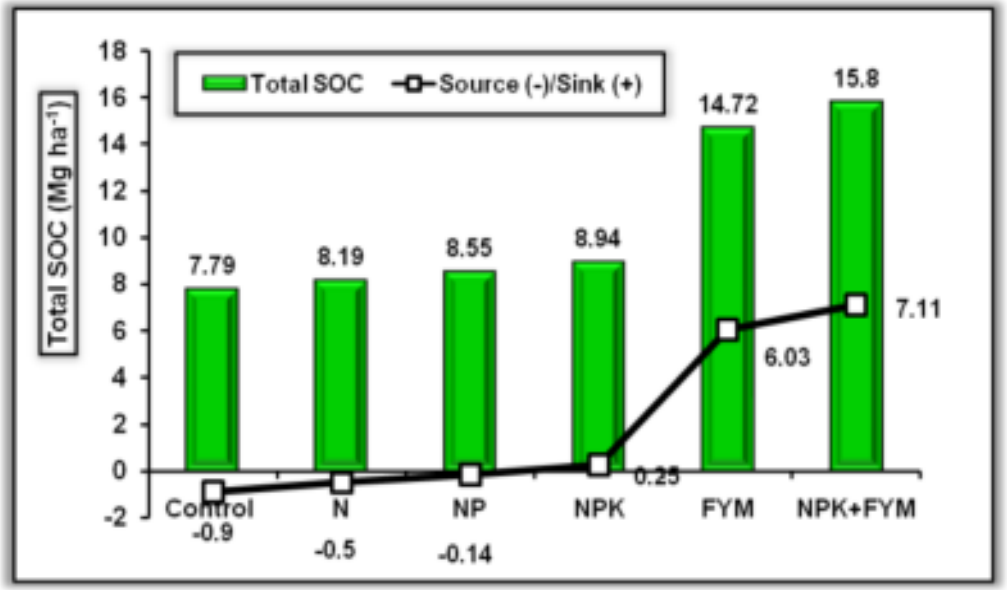
Treatments	BD	pH	EC (dSm^{-1})	OC ($g\ kg^{-1}$)	Available Nutrients ($Kg\ ha^{-1}$)		
					N	P	K
T_1 : 5 t FYM ha^{-1}	1.25	7.99	0.12	5.42	182.7	28.2	359.3
T_2 : 2 .5 t Vermi compost ha^{-1}	1.27	7.99	0.12	5.38	195.2	33.3	353.4
T_3 : 10 t FYM ha^{-1}	1.24	7.89	0.12	5.69	239.4	31.6	378.8
T_4 : 5 t Vermicompost ha^{-1}	1.25	7.93	0.12	5.56	238.7	34.3	373.2
T_5 : In situ green manuring of sunhemp	1.26	7.94	0.12	5.27	207.7	29.2	366.9
T_6 : Castor cake @ 500 kg ha^{-1}	1.26	8.02	0.12	5.34	219.7	30.1	355.5
T_7 : RD of nutrient through organic based on P equivalent basis	1.27	7.92	0.12	5.45	195.2	30.1	368.3
T_8 : Control	1.34	8.14	0.12	3.86	163.0	23.2	331.6
S.E(m)	0.00	0.02	0.00	0.04	12.1	0.6	0.8
CD at 5%	0.01	0.05	0.00	0.13	37.2	1.8	2.6

Organic Practices.....

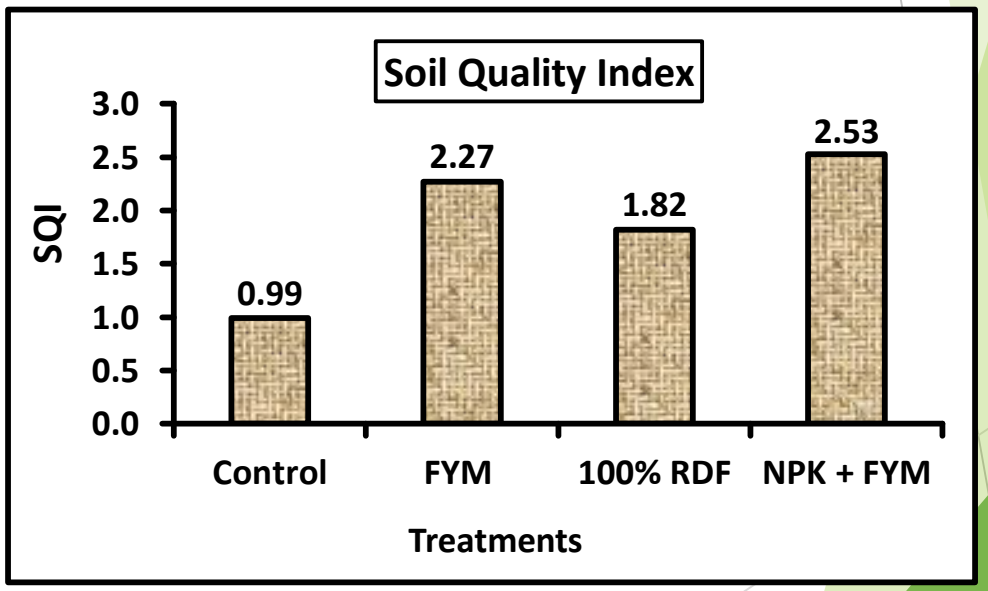
Findings of Long Term Fertilizers Experiment

30 Years Experimentation with Sorghum-Wheat Cropping system

Total SOC and net change over the year of cropping



Soil Quality Index



Experimental Findings based on organic agriculture practices

Comparative study of conventional organic and Biodynamic compost on Soybean

- **Seed yield of Soybean 1827 kg/ha to 1920 kg/ha after 5 years using vermicompost @ 2.5 t ha^{-1}**
- **Initial Organic carbon- 4.6 g/kg**
- **After 5 years- 5.4 g/kg**

Comparative study of conventional organic and Biodynamic compost on Chickpea

- **Chickpea yield 2027 kg/ha to 2210 kg/ha after 5 years using Vermicompost 2.5 t ha^{-1}**
- **Initial Organic carbon 4.6 g/kg**
- **After 5 years 5.4 g/kg**
- **10-15 % increase in yield**

Organic Summer Sesame

q ha^{-1}

- Sesame yield 1151 kg/ha
- Initial Organic carbon 4.5 g/kg
- After 5 years 5.2 g/kg

Comparative study of different compost on organic cotton

- **Seed yield of Cotton 1529 kg/ha to 1647 kg/ha**
- **Initial Organic carbon 4.2 g/kg**
- **After 5 years 4.8 g/kg**

International Collaboration for Organic Agriculture

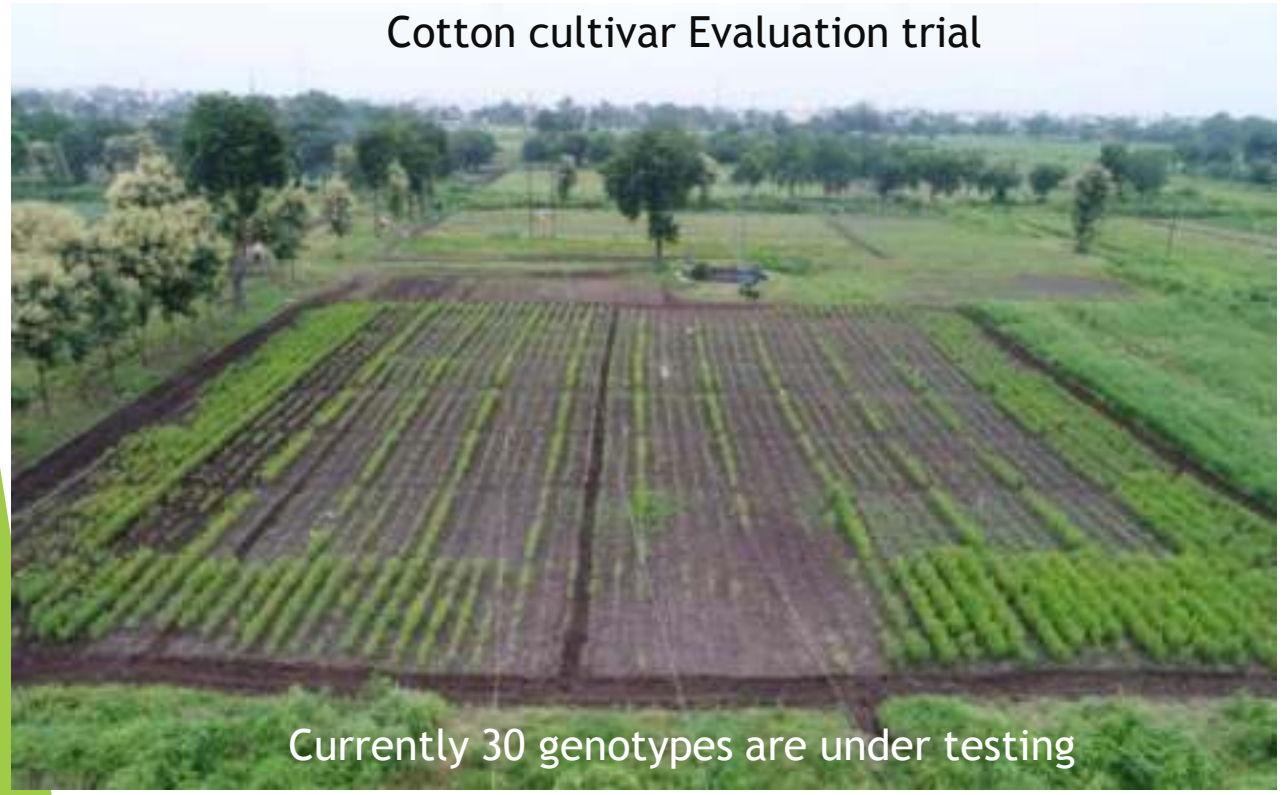
"FiBL-for development of cotton cultivar based on organic inputs"

(MoU with Department of International Co-operation Research Institute of Organic Agriculture ,Switzerland)

Object:

To develop genotype for organic cotton cultivation using organic input

Cotton cultivar Evaluation trial



Currently 30 genotypes are under testing

Important Features

- ✓ Cotton cultivar Evaluation trial
- ✓ 30 genotypes under testing
- ✓ Date of sowing - 4th July 2018
- ✓ Growth of cotton is satisfactory at boll development stage.
- ✓ Grants received Rs 8.89 lakhs

“University in Green Initiatives”

Solar Insect Light Trap

Important Features

- ✓ Solar insect light trap is useful for reducing insect population in cotton and other crops
- ✓ It consists of 10 W SPV panel and 12 V ; 7 Ah lead acid battery
- ✓ It consist of charge controller, dusk to down electrical circuit and adjustable stand
- ✓ It is provided with 5 W UV-A blue light bulb that attracts insects to get trapped
- ✓ Operating hours are 6 h per day during 4.00 h to 6.00 h and 18.00 h to 22.00 h
- ✓ One solar insect light trap is sufficient to cover an area of 2 Acre
- ✓ It does not involve use of electrical energy from grid

Solar Power Plant

- ✓ Installed 200 kW at Dr. PDKV, Akola campus
- ✓ The net saving of around Rs. 2.14 lakh per month which would be approximately 6.2 Cr over 25 years.
- ✓ The average saving in electrical consumption from grid will be 70% and saving in expenses on electricity is estimated as 44%

University in
“Mission Mode Programme”
for
Pink Boll Worm

Mission Mode Campaign for Pink Bollworm Management

- Cotton based cropping system is dominant in Maharashtra
  Cotton has major role in economy of state and country
- Government of Maharashtra Dr. PDKV, Akola and United Phosphorus Limited have executed Mission Mode Campaign for PBW
- Interns students involved for widespread awareness of PBW
- Government could saved Rs. 32000 Crore towards compensation amount to the farmers
- The integrated approach has saved economical and social loss

PBW management campaign in Vidarbha,2018

Network of Taluka wise PBW/BPH Monitoring Committee in Vidarbha,2018

Entomologist :Univ. entomologist, Asst. Prof. Pvt. Agril. Colleges and SMS (Pl. Prot.), KVK

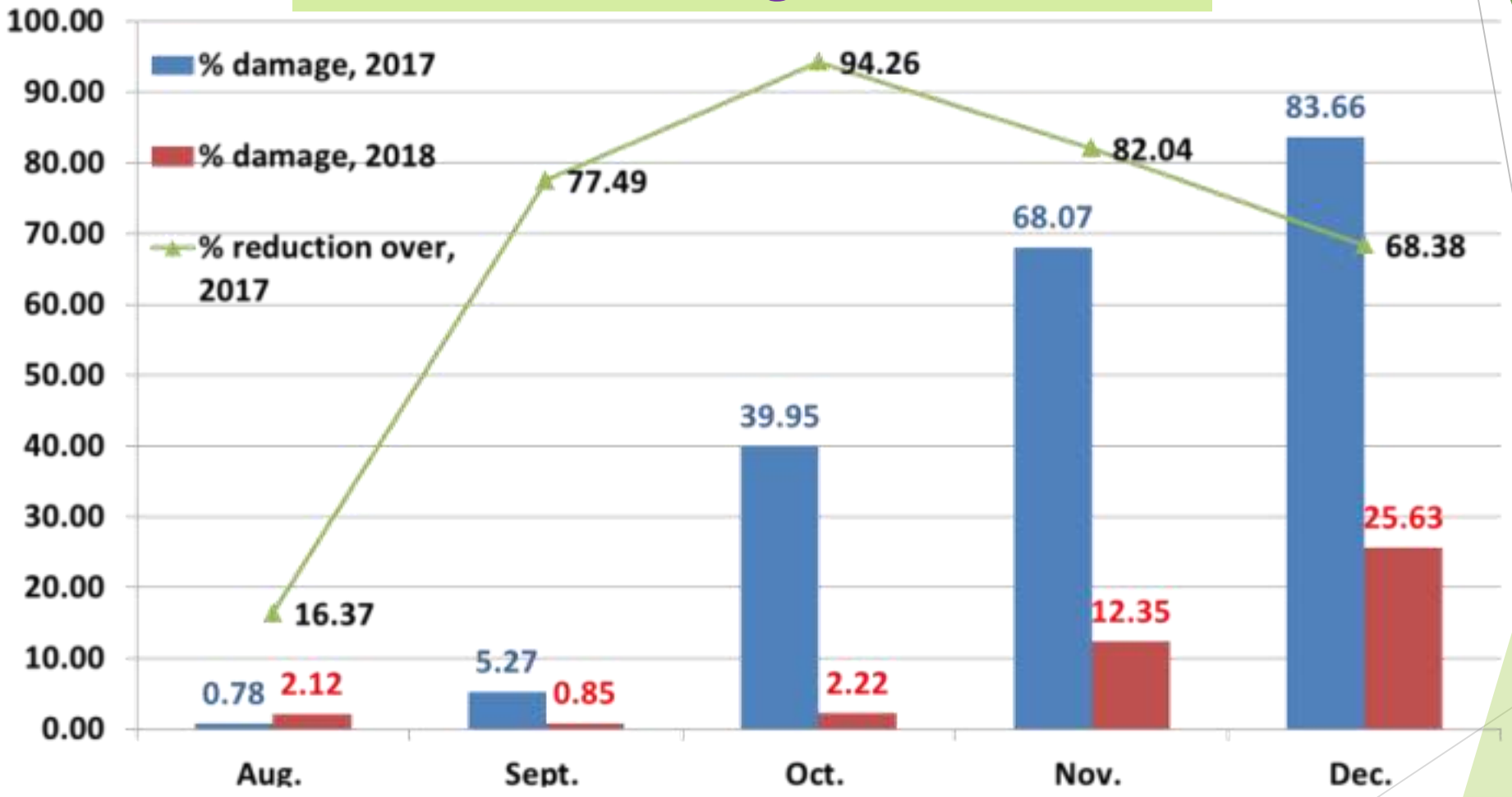
Pink bollworm Awareness Campaign

Awareness camps through Rural Agricultural Work Experience






Success of Integrated efforts



Per cent damage (2017 & 2018) and reduction over 2017

A step towards water sustainability……

Farm pond at Shivani Block, CRS, Dr. PDKV, Akola

Farm pond at Highway Block, CRS, Dr. PDKV, Akola

Organized International Farmers Dialogue (IFD)

- Farm Women Empowerment and Remunerative Technologies - 2014
- Nine countries represented
- More than 200 participants

University is organizing “International Symposium” on the eve of “ Golden Jubilee Year of Establishment

GLOBAL ORGANIC CONVENTION

on

“Natural Resource Management for Sustainable Agriculture, Soil Health, and Quality Food”

September 15-17, 2019

Hotel Le Meridian, Nagpur

In the memory of Martyrs.....

Thank you for attention!