

Department of Agricultural Engineering

- 1. Name of the Department/Section : Department of Agricultural Engineering:**
The Deptt.of Agril. Engineering was established in the year 1974, for importing higher training in the discipline of Agricultural Engineering, keeping in view the special demands of agricultural community of the Konkan region comprising Thane, Raigad, Ratnagiri and Sindhudurg districts of Maharashtra. It is a constituent department of Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.
- 2. About Department :**

There are well-equipped laboratories of following six sub-departments of Agril. Engineering discipline.

Sr. No.	Name of the sub-department
1.	Farm Machinery and Power Laboratory
2.	Agril. Process Engineering Laboratory
3.	Soil and Water Conservation Laboratory
4.	Irrigation and Drainage Laboratory
5.	Farm Structures Laboratory
6.	Computer laboratory

The University has appointed specialized and highly qualified staff in the above-mentioned disciplines of agriculture engineering and technology of the department. This has led to the improvement in the educational level of students due to detailed study of each and every aspect through the above disciplines of the college. The upgradation in faculty and staff, as well as, improvement in educational facilities of this department was only being achieved due to funding received from the ICAR. Similarly, various activities related to development and strengthening of laboratories through purchase of many advanced machineries, equipments, instruments are undertaken with the assistance of ICAR funding. This has resulted in improvement of the students' potential in different activities, such as technical education, sports, cultural and scientific research.



Deptt. of Agril. Engineering



Display Boards of Deptt.of Agril. Engineering



Well-equipped cabins for faculty members



Computer Lab of Deptt. of Agril. Engineering

3. Academic Programmers: Provide the details of each doctoral programme as
 a. **Bachelor Programmes**

B.Sc. (Agri):

S.N.	Semester No.	Term No.	Course No.	Credits	Title of the course offered by the department
1.	I	I	MATH-111	2(1+1)	Mathematics (DC)
2.	II	II	ENGG-121	2(1+1)	Fundamental of Soil & Water Conservation
3.	III	I	ENGG-232	2(1+1)	Introduction to computer Application
4.	V	I	ENGG-352	2(1+1)	Farm Power and Machinery
5.	VI	II	ENGG-363	2(1+1)	Protected Cultivation and Post Harvest Engineering
6.	VII	I	RAWE	2(0+2)	Rural Agril. Work Experience Programme
7.	VIII	II	AEL- ENGG - 486	2(0+2)	Natural Resources Management

B.Sc. (Horti):

S.N.	Semester No.	Term No.	Course No.	Credits	Title of the course offered by the department
1	I	I	MATH-111	2(1+1)	Mathematics (DC)
2	I	I	H/COMP-111	2(1+1)	Introduction to computer Application
3	V	I	H/ENGG-351	2(1+1)	Farm Power & Machinery
4	VII	I	EL-HORT- 471	1(0+1)	Nursery Management
7.	VIII	II	EL-HORT- 472	2(0+2)	Protected cultivation of high value horticultural crops

B.Sc. (For):

S.N.	Semester No.	Term No.	Course No.	Credits	Title of the course offered by the department
1	I	I	MATH-111	2(1+1)	Basic Mathematics (DC)
2	II	II	F/ ENGG-121	3(2+1)	Principles Hydrology, Soil & Water Conservation
3	V	I	F/ENGG 351	2(1+1)	Introduction to Computer Application

Course Curricula and syllabi of each subject: **Enclose as a separate file as a UG syllabus website.**

4. Infrastructure

- a. **Laboratories:** There are four laboratories in this department namely Laboratory of Soil and water conservation, Laboratory of Irrigation and Drainage Engineering, Laboratory of Agriculture process and structure Engineering, Laboratory of Farm Power and Machineries.



Soil & water conservation Engineering laboratory



Irrigation & Drainage Engineering Laboratory



Post harvest Technology Laboratory




Farm Structures laboratory




Farm Power and Machinery Laboratory

5. Faculty

- a. Academic staff: Assistant professor and above with the details of the staff as given below

Recent Photograph	Name of the Faculty	Dr. Y P Khandetod
	Post Held	Head
	Date of Birth	05 August 1961
	Qualification	B.Tech (Agril. Engg.)- Dr.PDKV, Akola M.Tech (Post Harvest Engg.)- IIT Kharagpur Ph.D (Agril. Food Engg.)-IIT Kharagpur
	Area of Specialization	Renewable Energy
	Experience (Years)	27 Year
	Research Project Guided	
	Ph.D	02 (In Progress)
	M.Sc./M.Tech	02 (02 In Progress)
B.Tech.	10	
Present area of Research	Renewable Energy	
Contact details		
Land line No.	(02358) 282414	
Mobile No.	09420156693	
Fax No.	(02358) 282414	
Email	pkhandetod@rediffmail.com	

	Name	:	Dr. Sonawane Somnath Pralhad
	Post Held	:	Associate Professor of APE, Department of Agricultural Engineering, College of Agriculture, Dapoli - 415 712 Dist - Ratnagiri (Maharashtra)
	Date of Birth	:	13.12.1973

Qualification				
Sr. No.	Degree	Year	CGPA	Institution/University
1.	Ph.D. (Agril. Engg) in PFE	2012	8.90/10.00 (89.0 %)	Maharana Pratap University of Agriculture and Technology
2.	M.E.(Ag) in PFE	1997	3.87/4.00 (86.2 %)	Rajasthan Agricultural University (RAU), Bikaner
3.	B. Tech. (Agril. Engg.)	1995	8.36/10.00 (83.6 %)	Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri

• **Additional Qualification**

1.	Qualified NET-98 (National Eligibility Test) held in December 1998 for Lecturership or Assistant Professorship conducted by ASRB, ICAR New Delhi.
2.	Qualified GATE-95 (Graduate Aptitude Test in Engineering) in subject of Agricultural Engineering conducted by IIT, Kanpur.

• **Academic Achievements, Rewards.**

1.	Recipient of Graduate Aptitude Test in Engineering Scholarship during Master Programme at College of Technology & Agricultural Engineering, Udaipur.
2.	Recipient of University Merit & Merit cum Means Scholarship during 1992-95 from Mahatma Phule Krishi Vidyapeeth, Rahuri.
3.	Stood or Rank FIRST in school and college for SSC and HSC examination respectively.

Area of Specialization	:	Processing and Food Engineering (OR Agricultural Process Engineering)
Experience	:	16 years
Research Project Guided	:	(including as a Major Advisor and Member of SAC)
PhD	:	02
M. Tech. (Agril Engg)	:	05
B. Tech.	:	15
Present Area of Research	:	1. Development and Performance Evaluation of Kokum Seed Sheller 2. Influence of hydrothermal treatments on dehulling of Kokum seed 3. Extraction of Oil (Butter) from Kokum Seed 4. Packaging and Storage study of Kokum (oil) butter 5. Development of high energy value finger millet biscuits

		6. Development of Extruded Products from Finger Millet Based Composite flour 7. Studies of Extraction of Cashew Nut Shell Liquid (CNSL) 8. Performance Evaluation of Storage of Wheat in GIC Silos CAP and Godown Storage 9. Design, Development and Performance Evaluation of Copra Dryer.
Research Publication	:	
Articles in journals	:	10
Conference/Technical Publication	:	52
Books published		
No. of Books	:	02
Chapter in Books	:	01
Contact Details		
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Mobile No.		09421610791
e mail		sponawane1@gmail.com

	Name of the Faculty	Er Amit Ashokrao Deogirikar
	Post Held	Assistant Professor (FMP)
	Date of Birth	22 nd August 1977
	Qualification	M.E. (FMP&E)
	Area of Specialization	Farm Power and Machinery
	Experience (Years)	13 Years
	Research Projects guided	00
	PhD	00
	M.Sc./M.Tech	01
	B.Tech.	
Present area of research	Farm Machinery, Magnetic seed treatment	
Contact details		
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H) RESEARCH PUBLICATIONS (List enclosed separately)

✓ International Research Journal	11
✓ National Research Journal	14
✓ Presented in Symposium or seminars	16
✓ Booklet published	02
✓ Extension/Popular article published	33
✓ Radio Talk (AIR, Ratnagiri)	03

SCIENTIFIC/TECHNICAL /POPULAR PUBLICATIONS OF Er. A. A. Deogirikar

A. International

1. Kamble A. K., R. H. Rahate, **A. A. Deogirikar**, K. P. Arulkar and L. P. Diwane (2003). Development and evaluation of multi power operated cotton planter. *Bioved* Vol. 14(1,2): 29 – 32.
2. Katkhede S. S., P. S. Parshurame, **A. A. Deogirikar**, C. N. Gangde (2003). Feasibility testing of plot thresher for green gram. *Bioved* Vol. 14(1,2):75–78.
3. Rahate R. H., Kamble; A. K., **A. A. Deogirikar**, K. P. Arulkar and L. P. Diwane (2003). Effect of blade inclined angles on performance of power weeder. *Bioved* Vol. 14(1, 2): 87 – 90.

4. **Deogirikar Amit**, Y. C. Bhatt, N. N. Narkhede and K. P. Arulkar (2004) Studies on cone type rotary nozzle for air assisted spraying. *Bioved* Vol. 15 (1, 2): 1 – 4.
5. Patil V. D., N. N. Narkhede, **A. A. Deogirikar** and K. P. Arulkar (2004) Modifications and testing of rotavator for cotton shredding. *Bioved* Vol. 15 (1, 2): 9 – 12.
6. Edlabadkar M. V.; **A. A. Deogirikar**, P. B. Kale and K. P. Arulkar (2004) Evaluation of Jojoba seed germination inside and outside the polyhouse. *Bioved* Vol. 15 (1, 2): 57 – 60.
7. Arulkar K. P.; S. S. Hiwase, **A. A. Deogirikar**, and M. M. Deshmukh (2004) Water requirement estimation from climatological data by probability analysis for sugarcane crop in Nagpur district. *Bioved* Vol. 15 (1, 2): 75 – 78.
8. Arulkar K. P.; S. S. Hiwase, **A. A. Deogirikar**, and M. M. Deshmukh (2004) Irrigation planning for Nagpur division of Maharashtra state. *Bioved* Vol. 15 (1, 2): 79 – 82.
9. Patil R. D.; **A. A. Deogirikar**, D. M. Mahalle, D. S. Khariche and M. M. Deshpande (2004) Milk pasteurization with pulse electric field. *Bioved* Vol. 15 (1, 2): 83 – 88.
10. **Deogirikar A. A.**, S. B. Gite and Y. C. Bhatt (2010) Performance evaluation of rotary nozzles for air assisted sprayer for cotton crop. *International Journal of Agricultural Engineering* Vol 3(2) 236-242.
11. Gite S. B., **A. A. Deogirikar** (2010) Design and testing of suitable boom for power tiller operated sprayer for blower type pattern of grape vineyard. *International Journal of Agricultural Engineering* Vol 3(2) 295-298.

B. National

1. Malwe; S. S., **A. A. Deogirikar** and N. N. Narkhede (2003) Development of Tractor Mounted Cotton Under Root Cutter. *PKV Research Journal*. Vol 27 (1) 26-29.
2. Deogirikar A. A., N. N. Narkhede and K. P. Arulkar (2003) Performance of different interculture equipment in cotton crop. *PKV Research Journal* Vol 27 (1) 30-33.
3. Golait S. D., **A. A. Deogirikar**, P. B. Kale, N. L. Raut, A. P. Deshmukh (2003) Energy and Cost Requirement for Construction of Greenhouse. *PKV Research Journal*. Vol 27 (1) 34-36
4. **Deogirikar A. A.**, P. B. Kale, S. G. Wankhade, V. K. Mahorkar (2003) Effect of pre sowing magnetic treatment on the biometric characteristics and yield of Isabgol crop inside greenhouse. *PKV Research Journal*. Vol 27 (1) 37-42
5. Gadling P. P., S. H. Bhange, S. V. Gupta and **A. A. Deogirikar** (2003) Status of greenhouse technology in Amravati district. *PKV Research Journal* Vol 27 (1) 71-72.
6. **Deogirikar A. A.**, P. B. Kale, S. G. Wankhade and B. B. Landge (2003) Germination of Safed Musali (*Chlorophytum borvillianum*) Tubers Inside and Outside Greenhouse. *PKV Research Journal* Vol 27 (2) 178-183.
7. Landge B. B., **A. A. Deogirikar** and P. B. Kale (2004) Status of greenhouse technology in Akola and Washim District (A Case Study). *PKV Research Journal* Vol 28 (1) 103-104
8. Landge B. B., A. K. Verma, D. Chaudhari, P. B. Kale and **A. A. Deogirikar** (2004) Studies on design refinements on CIAE two-row tractor drawn vegetable transplanter. *PKV Research Journal* Vol 28 (2) 200-206.
9. Mange P. O., S. B. Bakal, L. P. Diwane and **A. A. Deogirikar** (2005) Comparison between tractor and multipaired bullock drawn M. B. Plough. *PKV Research Journal* Vol 29 (1) 125.

10. Arulkar K. P., R. C. Bhuyar, **A. A. Deogirikar**, S. C. Sarode and P. S. Joshi (2005) Wetting pattern and salt distribution in micro sprinkler irrigation. *Agric. Sci. Digest* 24(4): 296-298
11. **Deogirikar A. A.**, P. B. Kale and S. M. Patil (2005) Effect of greenhouse and shade net on Isabgol crop. *Journal of Agrometeorology* Vol 7(2):279-283
12. **Deogirikar A. A.** and P. B. Kale (2006) Performance evaluation of safed musali crop inside greenhouse. *PKV Research Journal* Vol 30 (1) 96-100.
13. Kale P. B. , **A. A. Deogirikar** and S. M. Patil (2006) Performance evaluation of ventilation and fan-pad system in semi-controlled polyhouse during monsoon season. *Journal of Agrometeorology* Vol 8(2):226-229
14. Nalge D. N., **A. A. Deogirikar**, N. M. Konde and P. R. Damre (2007) Performance of cotton under drip irrigation on vertisols. *Jou. of Soils and Crops*. Vol 17 (2): 299-303.


C. Presented

1. Pethe M. M., **A. A. Deogirikar** and P. S. Phirke (2002). Design and development of small capacity juice concentrator. XXXVI Annual Convention of ISAE
2. Narkhede N. N. and **A. A. Deogirikar** Performance of different interculture equipment in cotton crop. XXXVII Annual Convention of ISAE, Udaipur. Jan 29-31, 2003 (17).
3. **Deogirikar A. A.**, N. G. Jadhav and N. N. Narkhede (2003) Development of centrifugal blower for air assisted sprayer. XXXVII Annual Convention of ISAE, Udaipur. Jan 29–31, 2003. (21)
4. Aware P. G., B. V. Khobragade, **A. A. Deogirikar** and N. N. Narkhede (2004) Evaluation of self – propelled interculture equipment in cotton crop. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (43)
5. Khan T. S., A. V. Sawargaonkar, **A. A. Deogirikar**, K. P. Arulkar and D. M. Mahalle (2004) Development and testing of solar photovoltaic powered boom sprayer. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (48)
6. Vidhale G. B., M. S. Pujari, **A. A. Deogirikar** and L. P. Diwane (2004) Evaluation of air assisted boom sprayer in cotton crop. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (50)
7. Banwade A. N., A. B. Bhinge, **A. A. Deogirikar**, K. P. Arulkar and S. H. Thakare (2004) Development of power operated grass cutter. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004.(53)
8. Narkhede N. N., S. S. Malwe and **A. A. Deogirikar** (2004) Development of tractor mounted cotton under root cutter. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004.(68)
9. Mahajan S. M., S. K. Jawale, **A. A. Deogirikar** and K. P. Arulkar (2004) Development and testing of subsurface lateral laying implement. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004.(68)
10. Kulkarni S. S., **A. A. Deogirikar** and L. P. Diwane (2004) Comparative study of energy requirement for different rabi crops. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (109)
11. Arulkar K. P., **A. A. Deogirikar** and G. T. Patale (2004) Estimation of crop evapotranspiration for rice (Kharif) in Nagpur district. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (184)
12. Arulkar K. P., **A. A. Deogirikar** and G. T. Patale (2004) Water requirement of some crops under Wardha district from climatological data. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (184)

13. Arulkar K. P. and **A. A. Deogirikar** (2004) Wetting pattern and salt distribution in drip and micro-sprinkler irrigation. XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (185)
14. Zade M. R., K. P. Arulkar and **A. A. Deogirikar** (2004) Consumptive use of water for summer groundnut at western Vidarbha (Amravati division) XXXVIII Annual Convention of ISAE. Jan 16–18, 2004. (185)
15. **Deogirikar A. A.**, P. B. Kale and M. N. Kolase (2004) Energy and cost requirement for construction of greenhouse (A case study). 18th National Conference on Agricultural Marketing, Shimla (HP) during 28th Nov. to 1st Dec. 2004 (69)
16. **Deogirikar A. A.**, P. B. Kale, S. G. Wankhade and V. K. Mahorkar (2005) Effect of pre sowing magnetic treatment on the biometric characteristics and yield of Isabgol crop inside greenhouse. 19th World Congress of Science and Spirituality holistic health inter-faith peace. Zoroastrian College, Mumbai Jan 27-31, 2005.

D. Booklet

1. Narkhede N. N. and **A. A. Deogirikar**. (2002) *Tractor Mounted Rotavator – Success Story*. Published by Coordinating Cell AICRP on FIM, CIAE, Bhopal, India
2. M. N. Patil, Ritu Thakare, N. M. Konde and **A. A. Deogirikar** (2006) “**‘k’or ‘ksrhk Bh e`n O;oLFkku**” Published by Dept of Agricultural Chemistry and Soil Science, Dr PDKV, Akola

	Name of the Faculty	Er. Rodage Bhawna Tushar
	Post Held	Assistant Professor of APE
	Date of Birth	06 th December 1975
	Qualification	M.Tech. (APFE)
	Area of Specialization	Agricultural Processing and Food Engineering (<i>OR</i> Agricultural Process Engineering)
	Experience (Years)	08 years
	Research Projects guided PhD M.Sc./M.Tech B.Tech.	Nil
	Present area of research	Jamun seed for making Powder, Jackfruit Pulp for Idali making
	Contact details Land line No. Mobile Fax Email	02358280213 (O) 09730245977 bhawnashirsat@rediffmail.com

H) RESEARCH PUBLICATIONS (List enclosed separately)

✓ International Research Journal	06
✓ National Research Journal	00
✓ Presented in Symposium or seminars	01
✓ Booklet published	02
✓ Extension/Popular article published	10
✓ Radio Talk (AIR, Ratnagiri)	00

SCIENTIFIC/TECHNICAL /POPULAR PUBLICATIONS OF Er. B. T. Rodage

A. International

1. Girja Sharan, Kishor P. Rawale and **Bhawna S. Shirsat**. 2012. Small Innovations to Improve Quality and Safety of Vegetables Retailed in Ahmedabad City. International Journal for Service Learning in Engineering, The Pennsylvania State University, PA 16802 ; Manuscript submitted for Publication.
2. Girja Sharan, Kishor P. Rawale and **Bhawna S. Shirsat**. 2011. Quality-oriented fresh vegetable supply chain: A pilot in Ahmedabad, India. Food Chain, Warwickshire, CV23 9QZ, UK; Vol.1 (1) :95-105

3. **Bhawna Shirsat**, S.Patel, S.D.Kulkarni, P.H.Bakane and Manisha Khedkar. 2008. Physical properties of kodo (*Paspalum scrobiculatum* L.) millet. International Journal of Agricultural Sciences, India. Vol.4 (2) : 580-587
4. **Bhawna Shirsat**, S.D.Kulkarni, S.Patel, and S.P.Singh. 2008. Milling characteristics of kodo (*Paspalum scrobiculatum* L.) millet. International Journal of Agricultural Sciences, India Vol.4 (2): 712-718
5. **Bhawna Shirsat**, S.D.Kulkarni, and S.Patel. 2009. Effect of premilling treatments on colour analysis of kodo (*Paspalum scrobiculatum* L.) millet. International Journal of Agricultural Engineering, India Vol.2 (1): 153-156
6. **Bhawna Shirsat**, S.D.Kulkarni, and S.Patel. 2009. Hydration characteristics and saturation moisture content of kodo (*Paspalum scrobiculatum* L.) millet. International Journal of Agricultural Engineering, India Vol.2 (1): 98-102
7. **S. Shirsat Bhawna** and P.S.Phirke. 2012. Thermal properties of different pulses. International Journal of Agricultural Engineering, Vol. 5 (2): 178-283.

B. National – Nil

C. Technical

1. Girja Sharan, Kishor P. Rawale and **Bhawna S. Shirsat**. 2004. Clean 'n' Fresh Vegetable Chain. Alumnus, Indian Institute of Management, Ahmedabad. Vol.36 (3): 17-18.

D. Presented (India)

1. **Shirsat, B.S.**, S.D.Kulkarni and S.Patel . 2007. Hydration characteristics and saturation moisture content of kodo (*Paspalum scrobiculatum* L.) millet. Annual Convention of Indian Society of Agril. Engineers, at Junagadh (Gujarat).

E. Booklet

1. Girja Sharan, Kishor Rawale and **Bhawna Shirsat**. 2004. Clean 'n' Fresh Vegetable Chain. Clean 'n' Fresh Vegetable Chain is a Research and Development project of Indian Institute of Management, Ahmedabad.
2. Girja Sharan, Kishor Rawale, Kamlesh Jethva, Riddhish Shah, **Bhawna Shirsat**, Shashank Singh and Haroon Abu Bakr. 2004 Management of Technology in Arid Areas. Management of Technology in Arid Areas: A Long Term Programme, Development and Outreach Station, Kothara.

6. Instructional Farm: Not applicable

7. Research Activities and Achievements (including projects)

The staff members working in this department conducting their research activities under the Faculty of Agricultural Engineering in the various departments of College of Agricultural Engineering and Technology, Dapoli. Dr. S. P. Sonawane and Er. B. T. Rodage conduct their research projects in the Department of Agricultural Process Engineering and Er. A. A. Deogirikar conduct his research project at Department of Farm Power and Machinery, CAET, Dapoli. To avoid the duplicacy of projects are not highlighted here. Hence for research activities of this department readers are requested to refer the research activities of CAET, Dapoli.

8. Repository of abstracts of the theses: Not applicable

9. Extension Activities

a. Radio/TV Talks delivered by the staff members of the Department/Section:

1. Dr. S. P. Sonawane:
Radio talk – 02
TV talk- 03
2. Er. A. A. Deogirikar
Radio talk – 03
TV talk- 00
3. Er. B. T. Rodage
Radio talk – Nil
TV talk- Nil

b. Farmer-Scientist Forum: Not applicable

c. Other Extension Activities:

Trainings provided to farmers

1. Coconut processing
2. Finger millet processing
3. Kokum, Karonda, Jamun and Jackfruit processing
4. Demonstration of farm tools and implements.

d. Publications:

1. Books: 07
2. Booklet/bulletin: 05
3. Folders: Nil
4. Souvenir/Proceedings
of Seminar/Symposia/Conference/Workshop Organized: 02
5. Training manuals of the training programme organized: Nil
6. Journal Research papers: 40
7. Full length research papers published in Proceedings of
Seminar/Symposia /Conference/Workshop : 75

10. Details of other activities :

The ARIS LAN Unit of University is under the control of Department of Agricultural Engineering. Er. A. A. Deogirikar, Assistant professor (FMP) works as an incharge of this unit. This department also controls and maintains the UG and PG Computer Laboratory facilities of College of Agriculture, Dapoli. The Kokam plot behind the college is developed by this department and is a demonstration unit to the farmers and students

11. Contact Information

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12. News and Events