Department of Agril. Statistics
Post Graduate Institute
Mahatma Phule Krishi Vidyapeeth,
Rahuri-413 722,
Dist. Ahmednagar (MS)

Establishment & Mandates:

The Department of Statistics was established in 1969 in the Mahatma Phule Krish Vidyapeeth, Rahuri. Teaching is the main activity of the Department. The courses in Statistics are taught at B.Tech, M.Sc./ M.Tech and Ph.D. levels.

Besides teaching, Statistics Department is actively engaged in statistical analysis and interpretation of field and laboratory experiments conducted by the University research scientists and scholars. The Department renders the work of layout of experiments, analysis and interpretation of research work.

Faculty:

Sr. No.	Name	Designation	Mobile No.	E-mail
1.	Dr. M. R. Patil	Associate Professor	9420807600	mrpatil2003@gmail.com
2.	Dr. S. D. Shinde	Assistant Professor	7588078466	swatidshinde@rediffmail.com

Degree Progarmme wise Supporting Courses Offered

Academic Programmes

1. **Supporting**:

Sr. No.	Degree Program	Total No. of Courses offered
1	B.Tech. (Agril. Engg.)	01
2	M.Sc (Agri)	03
3	M.Tech. (Agril. Engg)	02
4	Ph.D. (Agri.)	06
5	Ph.D. (Agri. Engg.)	01

Bachelor's Programme (B. Tech.)

S.N.	Course No.	Title	Credits	Discipline
01	AS STAT- 121	Agricultural Statistics and Data Analysis	1+1	B. Tech (Agril. Engg.)

The following courses are implemented from 2022-2023 according to BSMA syllabus for M.Sc. and M. Tech.

S.N.	Course No.	Course Title	Credits	Discipline
01	STAT 502	Statistical Methods for Applied Sciences	3+1	Agronomy, Vegetable Science, Fruit Science, Extension, Economics, and Livestock Production Management
02	STAT 511	Experimental Designs	2+1	Seed Science, Plant Physiology, GPB, Agronomy, Vegetable Science, Fruit Science, , and Dairy Science, Soil Science, Pathology, Microbiology, Entomology, IWM, and M.Tech. (Process Engg.)
03	STAT 522	Data Analysis Using Statistical Packages	2+1	Extension, Economics, Biochemistry and Biotechnology
04	STAT 501	Statistical Methods for Research Work	2+1	M.Tech. (All discipline)

Programme-wise student's intake and attrition of Ph.D. Degree

The following supporting courses of Agril. Statistics are implemented from 2022-2023 according to BSMA syllabus for Ph.D. Degree

S.N.	Course No.	Course Title	Credits	Discipline
01	STAT 502	Statistical Methods for Applied Sciences	3+1	Dairy Science

02	STAT 512	Basic Sampling Techniques	2+1	Extension,
03	STAT 521	Applied Regression Analysis	2+1	Economics, Extension
04	STAT 522	Data Analysis Using Statistical Packages	2+1	Agronomy, Vegetable Science, Fruit Science and Livestock Production Management, SWCE
05	STAT 612	Advanced Design of Experiments	2+1	Agronomy
06	STAT 511	Experimental Designs	2+1	Agril. Engg.

Research Recommendations

1. Study of contribution of macro-nutrients in Turmeric (2021).

Path analysis of turmeric yield contributing nutrient factors revealed major contribution of FYM (43%) followed by Nitrogen (26%). By using regression analysis, it was observed that FYM contributed significantly in turmeric yield. Therefore, it is recommended to apply fertilizers (as per the yield target equation) with FYM for achieving targeted yield.

2. Study of contribution of macro-nutrients in Rajma (2023)

On the basis of path analysis, the highest contribution of FYM in the yield of Rajma was found in both with and without fertilized plots. Hence, an application of fertilizer nutrients as per STCR based yield target equations with FYM is recommended for obtaining higher yield of Rajma, increasing fertilizer use efficiency and maintaining soil health.

3. Forecasting of Export of Sheep and Goat Meat from India. (2023)

The Maldives, Saudi Arab and UAE are major importer of Indian sheep and goat meat and stable markets for prices. Therefore, it is recommended that it needs to concentrate on these countries for export of Indian sheep and goat meat

4. Study of Contribution of Macro Nutrients in *Rabi* Onion (2024)

On the basis of path analysis, the highest contribution of vermicompost in the yield of *rabi* onion was found 25 and 79 per cent in both with and without fertilized plots respectively. Hence, an application of fertilizer nutrients as per STCR based yield target equations with vermicompost (5 t ha^{-1}) (prepared on farmer's own field) and liquid bio fertilizer (each 500 ml ha^{-1} Azotobacter and PSB) is recommended for obtaining higher yield of *rabi* onion, increasing fertilizer use efficiency and maintaining soil health.

5. Contribution of Reproductive Traits in Lactation Milk Yield of Halfbred Cattle (2024)

On the basis of path analysis, in Half-bred cattle the direct significant contribution of age at first calving (AFC) in the milk yield was 6 to 22.41 per cent observed in all the six lactations. It also significantly affects the lactation milk yield (LMY) and lactation length (LL). Hence, it is recommended that farmers may give proper attention towards the age at first calving (850 to 950 days) to increase the milk yield of Half-bred cattle.

Department of Statistics provides the facility to the research technical staff individually for their experiment layout, statistical analysis and interpretation.
The faculty also undertakes research projects every year.

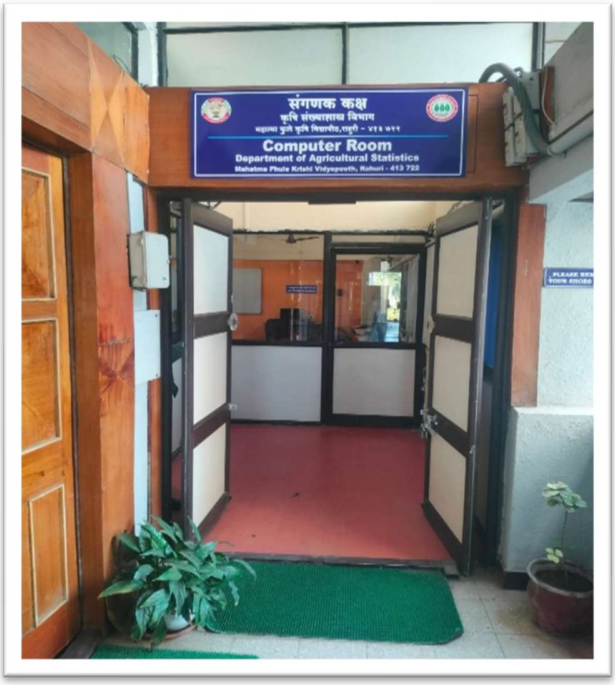
The list of projects from 2021-22 to 2024-25 is as below

S.N.	Title of Research Project	Year
01	Study of contribution of macro-nutrients in Chickpea.	2021-22
02	Study of contribution of macro-nutrients in Rajma.	2022-23
03	Forecasting of Export of Sheep and Goat Meat from India	2022-23
04	Study of Contribution of Macro Nutrients in *Rabi* Onion	2023-24
05	Contribution of Reproductive Traits in Lactation Milk Yield of Halfbred Cattle	2023-24
06	Trends of Area, Production and Productivity of Soyabean in Maharashtra	2024-25

Classrooms and Laboratories:

Department wise class rooms

Sr. No.	Name of office / Dept	No.	Space m^2
01	Virtual Classroom (Hall No. 125)	01	185
02	Smart Classroom (Hall No. 124)	01	185
03	Smart Classroom cum Practical Laboratory	01	78.0
04	Computer Laboratory	01	78.0


संगणक कक्ष
कृषि संख्याशास्त्र विभाग
Computer Room
Department of Agricultural Statistics
Mahatma Phule Krishi Vidyapeeth, Rahuri - 413 722


व्याख्यान कक्ष
कृषि संख्याशास्त्र विभाग
Lecture Hall
Department of Agricultural Statistics
Mahatma Phule Krishi Vidyapeeth, Rahuri - 413 722









Research Publications

I) List of the Research Articles above 6.00 NAAS rating

Sr. No.	Name of the authors(s)	Title of the published paper	Name of the recognized journal	Year	Vol. Issue and Page No. of Journal	NAAS rating
1	Pranav Pramod Pawase, Sachin Madhukar Nalawade, Avdhoot Ashok Walunj, Girisg kumar Balasaheb Bhange, Pravin Bhaskar Kadam, Anil G. Durgude, Mahesh R. Patil	Comprehensive study of on –the-go sensing and variable rate application of liquid nitrogeneous fertilizer	ELSEVIER Computers and Electronics in Agriculture	2024	0168-1699	14.30
2	J. K. Joshi, A. A. Atre, S. B. Nandgude, M. G. Shinde, A. G. Durgude, S. D. Gorantiwar and M. R. Patil	Empirical modeling of suspended sediments using spectral data from spectroradiometer and sentinel-2 in Mula Dam Reservoir, Maharashtra, India	Scientific report	2025		9.8
3	Janhavi Joshi, Atul Atre, Sachinkumar Nandgude, Mukund Shinde, Anil Durgude, Sunil Gorantiwar, Mahesh Patil	Estimation of suspended sediment concentration using seltinel-2 band functions in Mula reservoir, Rahuri, India	Environment Engineering and Management Journal	2023	Vol. 22 (2), 375-387	7.10
4	Nikita B Gorde, Ritu S Thakare, V S Patil, S R Shelke, M R Patil, B M Kamble , Samiksha G Ahire & Mayuri M Jagtap	Effect of microbial enrichment on nutrient dynamics and microbial population of different organic composts	PLANT SCIENCE TODAY	2026	Vol 13(sp2): 01–10 eISSN 2348-1900	6.8
5	Swati D. Shinde, Kranti B. Patil, M.R.Patil, V.S.Wani, V.S.Patil	Study of Contribution of Macro –Nutrients in Chickpea Yield	Scientist	2023,	Vol (2) Issue 1 664-671	6.85
6	Samiksha G Ahire1*, V S Patil1, Ritu S Thakare1, S A Kadam2, S R Shelke1, M R Patil3, B M Kamble1, Mayuri M Jagtap1, Nikita B Gorde1 & Ranuji B Zodge1	Exploring the effect of graded nitrogen, phosphorus and potassium (NPK) levels on soybean (Glycine max L.) growth, yield and soil fertility responses	PLANT SCIENCE TODAY	2026	Vol 13(sp5): 1–12 ISSN 2348-1900 eISSN 2348-1900	6.8

7	Shinde C S1*, Chimote V P1, Shinde S D2, Awari V R1, Deshmukh M P3 & Shinde G C	Genetic analysis of yield and physiological traits in soybean [Glycine max (L.) Merr.] under drought stress	Plant Science Today	2026	eISSN 2348-1900 Vol XX(1): 1-XX	6.8
II) List of the Research Articles below 6.00 NAAS rating						
1	M.K. Hadalagi, D.H. Sarnobat, V.S. Shinde, Y.G. Ban,S.D.Shinde and R.S.Bhoge	Efficacy Of Fungicides and Bio-Control Agents Against Exserohilum Monoceras Causing Leaf Spot Disease Barnyard Millet	Plant Archives	2026	26 (1) : 892-899	5.59
2	Chavan MV, Chimote VP, Shinde GC, Deshmukh MP, and Shinde SD	Inheritance studies through generation mean analysis for yield and yield components in soyabean	Plant Archives (An International Journal)	2024	Vol 24, 2	5.59
3	SJ Deshmukh, SB Gawade, SB Latake, SV Kolase, RT Gaikwad, SD Shinde, DH Sarnobat, BY Pawar and SA Raut	In vitro evaluation of fungicides, essential oils and bioagents against Alternaria Leaf Spot of Ashwagandha (Withania Somnifera L.) caused by Alternaria Arborescens	Plant Acchives	2025	25(2), 453-460, 26(01) :43-49	5.59
4	D. C. Vanjare, G. C. Shinde, S. D. Shinde and V.S. Pawar	Genetic Variability, Heritability and Genetic Advance Studies for Green Forage Yield and Associated Traits in Forage Oat (*Avena sativa L.*)	Int. Journal Curr. Microbial. App. Sci.	2021	Vol. 10(3): 488-493	5.32
5	U. Dileep a, S. B. Gawade a, S. B. Latake a, S. V. Kolase a, R. T. Gaikwad a, S. D. Shinde b, S. G. Dalvi c, D. H. Sarnobat a, S. J. Deshmukh a and C. R. Geetha a	Evaluation of Plant Extracts, Bioagents and Chitosan against Alternaria Leaf Spot of Asalio (Lepidium sativum L.) Caused by Alternaria burnsii	Journal of Advances in Biology & Biotechnology	2026	Volume 29, Issue 9, Page 1175-1183,	5.30

6	Bhagyashri s Pagar,SS shinde ,SB Nandgude, BK Gavit, SK Upadhye, MR Patil, and HS Ganachari	Impact of watershed managementon soil organic carbon stock : Insights from Hiware bazar and Daithane semi –arid landscapes, Maharashtra	International Journal of Advance Biochemistry Research	2025		5.29
7	PN Jogdande, VL Amolic, SR Dhonde, NS Kute, SD Shinde and PD Waghmare	Combining ability effects of maize inbred lines in different seasons at Rahuri	International Journal of Advanced Biochemistry Research	2024	8(8):42-54	5.29
8	Nimbalkar CA, VS Wani, SD Shinde and MR Patil	FYM and macro-nutrients contribution in turmeric yield	Journal of Pharmacology and Phyto chemistry P-ISSN: 2349-8234	2021	10(3) : 267-271	5.21
9	Charudatta Nimbalkar, Swati Shinde, Vilas Wani and Mahesh Patil	Fertilizer consumption pattern in Western Maharashtra	Multilogic in science: issn 2277-7601	2021	10(34): 1453-1456	5.2
10	A B Mate, P M Kotecha, M R Patil, A G Titkare, and U D Chavan	Studies on utilization of papaya peel power in the preparation of cookies	The Pharma Innovation International Journal	2021	10(12):550-553	5.23
11	A G Titkare, Dr. U D Chavan, Dr. M R Patil, and P K Khedkar	Storage studies on effect of packaging material on changes in nutritional qualities of brown top millet enriched biscuits	The Pharma Innovation International Journal	2021	10(12): 355-361	5.23
12	S. N. Deshmukh Dr. U D Chavan, Dr. M R Patil, and V A Bhosale,	Effect of Storage period on nutritional qualities of sev prepared from different cultivars of sorghum	The Pharma Innovation International Journal	2021:	10(12): 409-412	5.23
13	V A Bhosale, Dr. U D Chavan, Dr. M R Patil, and S. N. Deshmukh	Effect of Storage period on Ascorbic acid and B-carotene content of dehydrated chickpea leaves	The Pharma Innovation International Journal	2021:	10(12): 409-412	5.23

14	Bade A S, Kulkarni S R and Wani V S	Evaluation of protein food baits against Bactrocera cucurbitae (Couillet) infesting cucumber	The Pharma Innovation Journal	2022	SP-11(10): 820-822	5.23
15	Chandan KY, PR Palande, AR Walunj, BY Pawar and MR Patil	Assessment of avoidable yield losses due to root-knot nematode, Meloidogyne incognita infesting tomato	The Pharma Innovation Journal	2022	11(11): 2701-2703	5.23
16	KS Chaudhari, SV Kolase, MH Shete, AV Chandanshive and MR Patil	Cultural and bio-chemical characterization of bacterial canker disease caused by Xanthomonas axonopodis pv. Citri in acid lime	The Pharma Innovation Journal	2022	11(10): 599-602	5.23
17	P S Gochar, R P Andhale, B T Sinare, R S Wagh, M R Patil, SS Jamdade	The Effect of Sowing Windows on phenology and heat unit accumulation of summer soybean for seed production	The Pharma Innovation Journal	2023	11(12): 1278-1281	5.23
18	Shashank VM, CS Patil, DM Firake, SA Landge and MR Patil	Effect of different sowing dates on the incidence of fall armyworm, Spodoptera frugiperda (J. E. Smith) in Rabi maize	The Pharma Innovation Journal	2022	11(12): 4572-4576	5.23
19	Shakil Patil,Nitin Ugale,Bharat Bhalerao, Mahesh Patil	Effect of cow urine and vermiwash application on growth and yield of organic chikckpea	The Pharma Innovation Journal	2022	11(12): 424-428	5.23
20	Sayntika Banik, RS Bhoge, SR Kulkarni, VR Shelar, SD Shinde and DR Bankar	Biology of pulse beetle (Callosobruchus chinensis L.) on chickpea (Cicer arietinum L.)	The Pharma Innovation Journal	2023	SP-12(12): 2113-2115	5.23
21	Shweta D.Deokar, Sharad V.Pawar,, Jitendra M.Patil and Swati D.Shinde	Biochemical changes and enzyme activities in post-rainy sorghum infested by shoot fly	The Pharma Innovation Journal	2023	SP-12(11): 399-401	5.23
22	Parihar Krisnpal, A G Durgude, B. D. Bhakare,A.M. Navale, U. S. Surve and V. S. Wani	Effect of Urban compost on yield of seasonal-sugarcane in *Vertic inceptisol*	The Pharma Innovation Journal	2023,	12(01):1027-1029	5.23

23	SB Kakade, PM Kotecha, VS Wani, BR Bhitye and UD Chavan	Studies on physio-chemical propertiesod little millet and its exploration in biscuits	The Pharma Innovation Journal	2023,	12(06):4688-4693	5.23
24	Chetan Chougale, Dr. RJ Desale, DK Kamble, VP Kad and MR Patil	Effect of season on composition of Red Sindhi cow milk	The Pharma Innovation Journal	2023	12(12): 2801-2803	5.23
25	Borje S A, Sinare B T, Shete B T, Patil M. R.	Efficacy of different herbicides for weed control in soybean	The Pharma Innovation Journa	2023	12(1): 2389-2391	5.23
26	AC Patil, UD Chavan, PJ Jadhav, PM Kotecha and MR Patil	Studies on preparation of toffee from dragon fruit	The Pharma Innovation Journal	2023	12(2): 609-612	5.23
27	AA Pawar, PM Kotecha, DS Satpute, UD Chavan and MR Patil	Studies on isolation and utilization of sorghum starch	The Pharma Innovation Journal	2023,	12(02): 613-616	5.23
28	DS Satpute, UD Chavan, AA Pawar, PM Kotecha and MR Patil	Studies on dehydration and preservation of safflower green leafy vegetables	The Pharma Innovation Journal	2023,	12(02): 617-621	5.23
29	Londhepatil PB, Dr. RJ Desale, Dr. DK Kambal, Dr. MR Patil and Dr. VP Kad	Effect of pomegranate juice and sugar on sensory qualities of pomegranate-based whey beverage	The Pharma Innovation Journal	2023	12(12): 4172-4177	5.23
30	VS Hiremath, US Surve, NJ Danawle, AV Solanke, SR Shelke, MR Patil, PS Gochar and Vikas Reddy	Effect of liquid organic formulations on growth, yield and quality of chickpea (*Cicer arietinum* L.)	The Pharma Innovation Journal	2023	12(1): 2768-2770	5.23
31	Vikas Reddy, NS Ugale, NJ Danawale, RH Kolse, AS Takate, MR Patil	Response of micronutrients on productivity and economics of Rabi sweet corn (Zea mays L.var. saccharata)	The Pharma Innovation Journal	2023	12(1): 502-505	5.23

32	SS Jamdade, BT Shete, NJ Danawale, Puja Phadte, NV Kashid, AG Durgude, MR Patil	Effect of new generation herbicides on growth attributing characters in Phule Samarth variety of kharif onion (Allium cepa L.)	The Pharma Innovation Journal	2023	12(1): 2281-2284	5.23
33	RU Medshikar, ST Aghav, CB Wayal, CS Chaudhari and MR Patil	Seasonal dynamics of thrips, T. tabaci and fruit flies, B. cucurbitae on cucumber	The Pharma Innovation Journal	2023	12(1): 685-687	5.23
34	Pratik Rajendra Phadtare, CS Chaudhari, ST Aghav, UK Kadam, TR Chavan and MR Patil	Management of pulse beetle (Callosobruchus chinensis L.) in chickpea using biorational products	The Pharma Innovation Journal	2023	12(1): 2768-2770	5.23
35	Megharaj R H, B T Sinare, N J danawale, R P andhale and M R Patil	The Effect of Sowing Windows and cutting management on growth and seed yield of oat	The Pharma Innovation Journal	2023,	12(2): 968-972	5.23
36	AR Gore, SS Dighe, JK Dhemre, RB Kadu, and SD Shinde	Studies on preparation and qualitative evaluation of grapefruit ready to serve beverage	International Journal of Advance Biochemistry Research	2025	SP-9 (10) 749-754	5.29
37	DP Shinde, SA Anarase, SD Shinde, LN Tagad, VL Amolic, GC Shinde and CS Shinde	Genetic variability in fodder drumstick (Moringa oleifera L.)	Int. Jou. of Advanced Biochemistry Research	2025	9(2):258263	5.29
38	Borse PS, Aher AR, Bhingarde MT, Dalvi US, Shinde SD and Borde YS	Genetic variability, association and path analysis of yield and its attributing traits in quinoa (Chenopodium quinoa wild)	International Journal of Research in Agronomy	2025	8(9): 405-413	5.2

39	HS Yadav, SS Sadaphal, PB Kharde, BA Deshmukh and SD Shinde	Entrepreneurial Dimensions of Rural Woman in Backyard Poultry: Insights from ICAR Farmer FIRST Villages of Rahuri, Maharashtra	International Journal of Research in Extension and Social Development	2025	8(9): 01-04	5.04
40	RA Gaikwad, SR Gadakh, SS Kulkarni, US Dalvi and SD Shinde	Environmental resilience and yield stability in sweet sorghum :Unlocking dual –purpose potential for juice and green cane	International Journal of Research in Agronomy	2025	8(8) :300-305	5.2
41	PD Waghmare , DV Dahat, VL Amolic GC Shinde, MR Patil, SD Shinde and SR Dhonde	Comb ining ability for maize inbreds lines for yield and yield traits	Int. Jou. of Advanced Biochemistry Research	2025	9(3):213-223	5.29
42	1Sajan S Hingonekar, 2Milind C Ahire, 3Goraksh K Sasane, 4Pandit B Kharde, 5Ganpat B Bachkar and 6Mahesh R Patil	Constraints faced by agriculture extension professionals working under state agriculture department of Maharashtra and various suggestions given by them to overcome these constraints	International Journal of Agriculture Extension and Social Development	2026	Volume 9; Issue 7; July 2026; Page No. 277-283	5.04
43	KG Rokade, RD Bansod, SB Nandgude, BK Gavit, MS Mane and MR Patil	"HEC-HMS model in watershed hydrology: A review of methods, calibration, and real-world applications".	International Journal of Research in Agronomy	2026	Volume -9, Issue-5 Year-2026 Page Number 53-57	5.20
44	NB Dhage, BK Gavit, SB Nandgude, SK Upadhye, SS Shinde and SD Shinde	Rainfall variability and trend detection in under changing climatic region for Ahilyanagar district of Maharashtra	International Journal of Research in Agronomy	2026	P-ISSN: 2618-060X SP-9(8): 379-385	5.20

45	Komal Rokade ,Ravindra Bansod ,Sachin Nandgude ,Bhau Gavit ,Mahanand Mane ,and Mahesh Patil.	Geospatial Assessment of Morphometric Characteristics of a Watershed in the Pravara River Basin	International Journal of Environment and Climate Change	2026	Volume 16, Issue 7, Page 523-533,	5.16
46	Chavan GP, Sasane GK, Kharde PB, Dhadwad MB,Patil MR and Ralebhat BN	Constraints faced and suggestions offered by banana growers: A study for strengthening extension services	International Journal of Agriculture Extension and Social Development	June 2026;	Volume 9; Issue 6; Page No. 216-219	5.04
47	Sawai Lal1, VS Patil2, Ritu S Thakare3, SD Shinde4, Bhimrao M Kamble5, SR Tatpurkar6, Rakesh Yadav7, Dileep U	Effect of bio-inoculants on growth, yield and soil enzymatic activities of soybean (Glycine max L.)	International Journal of Agriculture and Food Science	2026	8(10): 499-504	4.97

Guidance in Planning, Layout and Data Analysis of Scientific Experiment

Salient Achievements

Apart from teaching the Departmental staff helps to Scientists & Research scholars of this University and other Universities for analyzing and interpreting their experimental results. The Academic Staff of the Department is involved as a committee member for Students of various disciplines in Planning, Layout and Data Analysis of their Scientific Experiments.

Contact Details:

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