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

## Brief History

The Department of Agricultural Economics has its origin as Economics Section at the College of Agriculture, Pune which was established in the year 1925. The Agricultural Economics Section took stride in its activities and become popular in the country due to able leadership of Rao Bahadur Dr. P. C. Patil followed by Dr. T. G. Shirname, Dr. M. B. Ghatge, Dr. P. N. Driver, Dr. N. M. Jogalekar, Dr. T. Y. Patil and Dr. M. K. Shingare. After the establishment of Mahatma Phule Krishi Vidyapeeth at Rahuri in 1969, the section of Agricultural Economics, Pune itself culminated into a full-fledged Department of Agricultural Economics at the central Campus, MPKV, Rahuri. The present edifice of the Department of Agricultural Economics is the result of constant inspiration, sincere and continuous efforts made by all the eminent Agricultural Economics since its origin. The Department of Agricultural Economics at the Central Campus, Rahuri was led by different Head of Department and presently Dr. D. B. Yadav is the Head of the Department. The Department has been entrusted with the major responsibilities of teaching, research and extension in the subject of Agricultural Economics and Agribusiness Management especially in the jurisdiction of Western Maharashtra. The Department is pioneer in farm cost studied, Agricultural Marketing and Socio-Economic Survey.

| Sr. No. | Degree Programme | Year of Start | Departments / Discipline |
|---|---|---|---|
| 1 | M.Sc. (Agri.) | 1972 | Agricultural Economics. |
| 2 | Ph. D. | 1985 | Agricultural Economics |

At present the Department of Agricultural Economics, MPKV, Rahuri offers M.Sc. (Agri.) degree programme to 17 Students and Ph.D. degree programme to 4 Students.

## Mandate

The mandate of this institute is imparting higher education in Agriculture including Horticulture, advancement of learning and conducting the research particularly in Agriculture and other allied sciences / technologies specially for the rural people of the State in general and Western Maharashtra in particular and undertaking such activities pertaining to major mandates *viz.,E*ducation,Research and Extension as directed by the University from time to time.

## Mission

The Department is committed to produce trained manpower in Agricultural Economics and Agri-Business Management capable of assuming positions of responsibility in various academic and managerial cadres in agricultural sector. Specially, the mandate of the Department is to offer courses on Department of Agricultural Economics for undergraduate degree programme to the faculties of Department of Agriculture, Horticultural and Agril.Engineering and also Post Graduate Programme leading to M.Sc.(Agri.) and Ph.D Agricultural Economics, IWM, Extension Education and Food Science and Technology. A special Post Graduate Programme leading to M.Sc.(Agri.) in Agri-Business Management was run by the Department, which has been revised to MBM (Agri.) from the year 2008-09, at Collage of Agricultural Pune.

Another important mandate is to undertake research programme through Post-Graduate students, research scheme and ad-hoc research projects in Agricultural Economics and Agri.-Business Management.

The Department participates in Agricultural Extension activities organized by the MPKV and the Department of Agriculture, Maharashtra State from time to time. The basic purpose being to exchange information with other scientist and extension agencies engaged in agricultural development through trainings, group discussions, seminars, symposium, workshops, conferences and scientific, technical and extension publications.

The Department of Agricultural Economics was established with a mission to provide in depth education, research and extension education at post-graduate level for students. The mission aims at generation of scientific manpower in the discipline to shoulder the responsibilities of agricultural education, research, extension and agro-business developments in both public and private agricultural sectors.

## Objectives

The Department of Agricultural Economics, MPKV, Rahuri has the following mandatory objectives to achieve its mission.

- To provide PG education to graduate students in the discipline of Agriculture Economics leading to M.Sc. (Agri.) and Ph.D. degree.
- To develop infrastructure for class room and create educational facilities. i.e. E-teaching, provision of interactive Smart Board classroom solution
- To impart teaching in both basic and applied branches of Agriculture Education
- To provide social, cultural, employment and all-round personality development opportunities to the students.
- To carry out basic research through M.Sc. and Ph.D. theses and to support the on going applied research.

## Faculty Strength

| Sr. No. | Designation | No. of Sanctioned posts |
|---|---|---|
| | **A). Teaching** | |
| 1. | Head of Department | 1 |
| 2. | Professor | 1 |
| 3. | Associate Professor | 1 |
| 4. | Assistant Professor | 1 |

**Technical and supporting staff**

| Sr. No. | Designation | No. of Sanctioned posts |
|---|---|---|
| | **A) Research** | |
| 1 | Assistant Professor (Field Officer-I) | 1 |
| 2 | Assistant Professor (Field Officer-II) | 1 |

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| 3 | Assistant Professor (Bunding In-Charge ) | 1 |
| 4 | Assistant Professor (Strengthening Scheme) | 1 |
| 5 | Senior Research Assistant | 13 |
| 6 | Junior Research Assistant | 32 |
| 7 | Agriculture Assistant | 180 |

**Present Faculty:**

| S. N. | Name | Designation | Area of Specialization | Mobile Numbers | Email |
|---|---|---|---|---|---|
| 1. | Dr. R. B. Hile | Associate Professor & I/c Head | Agricultural Marketing and Production Economics | 09850495878 09834405176 | rbhile@gmail.com |
| 2. | Dr. A. V. Gavali | Assistant Professor | Agricultural Development, Farm Management and Production Economics | 09421945345 07588604031 | arungawali@gmail.com |
| 3. | Dr. V. G. Pokharkar | Assistant Professor | Production Economics and Farm Management | 09881838595 | aroecon_mpkvrahuri@gmail.com |
| 4. | Dr. T. B. Deokate | Assistant Professor | Production, Marketing and Finance | 08275466205 | drdeokatetai@gmail.com |

## Academic Programme

| S. N. | Particulars | Intake Capacity |
|---|---|---|
| 1 | M.Sc. (Agri.) | 15 |
| 2 | Ph.D. | 04 |

## M.Sc. (Agri.) Agricultural Economics

## Course Layout

### Minimum Credit Requirements

| Sr. No. | Subject | Minimum credit(s) |
|---|---|---|
| 1. | Major | 20 |
| 2. | Minor | 09 |
| 3. | Supporting | 06 |
| 4. | Seminar | 01 |
| 5. | Research | 20 |
| | **Total Credits** | **56** |
| | Compulsory Non Credit Courses | 06 |

| Sr. No. | Course Number | Course Title | Credits |
|---|---|---|---|
| **A) Major subjects (Min. 20 credits)** | | | |
| 1 | AG.ECON-501 | Micro Economic Theory And Applications | 2+0=2 |
| 2 | AG.ECON-502 | Macro Economics And Policy | 2+0=2 |
| 3 | AG.ECON-503 | Evolution Of Economic Thought | 1+0=1 |
| 4 | AG.ECON-504 | Agricultural Production Economics | 1+1=2 |
| 5 | AG.ECON-505 | Agricultural Marketing & Price Analysis | 2+1=3 |
| 6 | AG.ECON-506 | Research Methodology For Social Sciences | 1+1=2 |
| 7 | AG.ECON-507 | Econometrics | 2+1=3 |
| 8 | AG.ECON-508 | Linear Programming | 1+1=2 |
| 9 | AG.ECON-509 | Agricultural Finance And Project Management | 2+1=3 |
| **B) Minor Subjects (Min. 09 credits)** | | | |
| 1 | AG.ECON- 517 | Computer Applications For Agril. Economics | 2+1=3 |
| 2 | EXT 503 | Diffusion And Adoption Of Innovations | 2+1=3 |
| 3 | Ext 507 | Human Resource Development | 2+1=3 |
| **C) Supporting Subjects (Min. 06 credits)** | | | |
| 1 | AG.STAT-501 | Mathematical Methods For Applied Sciences | 3+0=3 |
| 2 | AGSTAT-511 | Statistical Methods For Applied Sciences | 2+1=3 |
| **D) Seminar (01 credit)** | | | |
| 3 | AG.ECON-591 | Seminar | 0+1=1 |
| **E) Master's Research (20 credits)** | | | |
| 4 | AG.ECON-599 | **Research Work** | 0 + 20=20 |

| F) Non Credit Compulsory Courses | | | |
|---|---|---|---|
| 1 | PGS 501 | Library And Information Services | 0+1=1 |
| 2 | PGS 502 | Technical Writing and Communications Skill | 0+1=1 |
| 3 | PGS 503 | Intellectual Property and Its Management | 1+0=1 |
| 4 | PGS 504 | Basic Concept In Laboratory Techniques | 0+1=1 |
| 5 | PGS- 505 | Agricultural Research, Research Ethics and Rural Development Programmes | 1+0=1 |
| 6 | PGS 506 | Disaster Management | 1+0=1 |

## Ph.D. Agricultural Economics

## Course Layout

### Minimum Credit Requirements

| Sr. No. | Subject | Minimum credit(s) |
|---|---|---|
| 1. | Major | 18 |
| 2. | Minor | 09 |
| 3. | Supporting | 05 |
| 4. | Seminar | 02 |
| 5. | Research | 45 |
| | **Total Credits** | |
| | Compulsory Non Credit Courses | 06 |

| Sr. No. | Course Number | Course Title | Credits |
|---|---|---|---|
| **D) Major subjects (Min. 18 credits)** | | | |
| 1 | AG.ECON-601 | Advanced Micro-economic Analysis | 1+1=2 |
| 2 | AG.ECON-602 | Advanced Macro-economic Analysis | 2+0=2 |
| 3 | AG.ECON-605 | Quantitative Development policy Analysis | 1+1=2 |
| 4 | AG.ECON-606 | Advanced Agricultural Marketing and Price Analysis | 2+1=3 |
| 5 | AG.ECON-603 | Advanced Econometrics | 2+1=3 |
| 6 | AG.ECON-604 | Advanced Production Economics | 2+1=3 |
| 7 | AG.ECON-609 | Environmental Economics | 2+1=3 |
| | | **Total** | **12+6=18** |
| **E) Minor Subjects (Min. 09 credits)** | | | |
| | EXTN-603 | Advanced Training technology | 2+1=3 |
| | EXT- 604 | Organizational Development | 2+1=3 |
| | EXT- 605 | Advanced Instructional Technology | 2+1=3 |
| | | **Total** | **6+3=09** |

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|---|---|---|---|
| **F) Supporting Subjects (Min. 05 credits)** | | | |
| | STAT-601 | Advanced Statistical Methods | 2+1=3 |
| | STAT-602 | Advanced Mathematics for Economics | 2+0=2 |
| | | **Total** | **4+1=05** |
| **F) Seminar ( 02 credit)** | | | |
| | AG.ECON-691 | Doctoral Seminar (Minor) | 0+1 |
| | AG.ECON-692 | Doctoral Seminar (Minor) | 0+1 |
| | | **Total** | **0+2=2** |
| **G) Doctoral Research ( 45 credits)** | | | |
| | AG.ECON-699 | **Research Work** | **0 + 45** |
| **F) Non Credit Compulsory Courses** | | | |
| | PGS 501 | Library and Information Services | 1+0 |
| | PGS 501 | Basic Concept in Laboratory Techniques | 1+0 |
| | PGS 502 | Technical Writing and Communication Skills | 1+0 |
| | PGS 503 | Intellectual Property and Its Management | 1+0 |
| | PGS- 505 | Agricultural Research, Research Ethics and Rural Development Programmes | 1+0 |
| | PGS 506 | Disaster Management | 1+0 |
| | | **Total** | **6+0=06** |

## Classrooms and Laboratories

One well-equipped classrooms are made available with this Department. These are well equipped with audio-visual aids for effective teaching. The department have well-equipped Computer laboratories and separate computers accessories instrument cell for conducting practical classes of the students. Since the laboratories are equipped with most of the instruments, it also enables staff of this department to carry out research.

**SMART Board**

All teachers of the Department of Agricultural Economics are using SMART Board for teaching of M.Sc. (Agri.) and Ph.D students.

## Department wise Classrooms

| Sr.No. | Name of office / Deptt | Particular | No. | Space $M^2$ |
|---|---|---|---|---|
| 1. | Dept. of Agricultural Economics | Class Room | 1 | 33.50 |
| 2. | Dept. of Agricultural Economics | Computer Lab. | 1 | 33.50 |
| 3. | Dept. of Agricultural Economics | Seminar Hall/ Smart class room | 1 | 107.0 |

### Computer Laboratories

The Department Agricultural Economics has well equipped laboratory for conduct of the research work. Almost the laboratory consists of sophisticated data analysis software, Internet *wi-fi* facilities, needed for the research.

| Sr. No. | Name of Department | Name of laboratory | Space $M^2$ | Purpose |
|---|---|---|---|---|
| 1 | Economics | Computer Laboratory | 33.50 | 1. To conduct the practical classes of students on computers.<br>2 To conduct research analysis of M.Sc. and Ph.D students mainly on research project. |

### Departmental Library

The departmental library consisting of 3500 books for references work of faculty and students, are the important facilities available in the Department.

## Research Recommendations

| 1996-1997 |
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| The per quintal cost of raisin making and net price realized in Tasgaon ( Sangli) area was worked out to Rs. 6414/- and Rs. 253/- respectively and to get maximum returns from raisin making, it should be preserved in cold storage and sale at the time of high market value. |
| **1999-2000** |
| It is necessary to give the information regarding the arrivals, prices, method of sale and consumer's preference of pomegranate, etc.to the farmers every day. |
| The cultivators need to be educated for scientific care and management especially with regard to nutrient and veterinary aid of milch animals for improving their productivity. |

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| The farmer beneficiaries of Watershed Development Programmes being implemented in Maharashtra have not been taking care of the repairs and maintenance of such watershed works. In this regard, it is recommended that the Governmental agencies or NGO's should receive the written guarantee from the farmers before the watershed work starts as "We shall abide for the repairs and maintenance of the project". |
| As Adrash Gaon Yojana has shown positive impact on rural development. So, it may be implemented in rural Maharashtra on a large scale. |
| There is need to strengthen credit support through co- operatives in the rainfed zone, for productive investment in agriculture. |
| **2000-2001** |
| The average net price realized for grapes in export of market was one and half to two times more than that of the domestic markets indicating the need for promotion of exports. The flame seedless variety of grapes fetched the highest per kilogram net price of Rs. 79.18 in Tesco Super market, London. It is recommended that flame seedless variety of grape be exported to UK. Besides, export promotions through MAHAGRAPE needs to be strengthened. |
| A study on marketing of grapes in Western Maharashtra indicated the highest per kilogram net price realized for Sharad seedless to Rs. 21.42 in Kolkata, for Tas- A- Ganesh to Rs.17.81 in Ludhiana, for Sonaka to Rs. 22.37 in Kanpur and for Thompson seedless to Rs. 15.33 in Ludhiana market during the year 1999-2000. It is, therefore, recommended that the grape growers may consider the varietal preference for securing maximum price in the domestic market. |
| The study revealed the existence of operational weaknesses concerning to considerable delays in grading, weighing and payments, malpractices and exhaustive procedure leading to inefficiencies. As a result, 55 per cent of the cotton producers involving 47 per cent of cotton was sold to private agencies in Maharashtra. It is therefore, recommended that operational weaknesses of the Cotton Monopoly Procurement Scheme be removed to make it more useful to the cotton growers. |
| **2001-2002** |
| Even though, there has been a partial adoption of improved production technologies in gram and tur, it has helped in improving the productivity of these pulses. It is, therefore, recommended that the cultivators be educated for full adoption of improved production technologies for still higher productivity. |
| The per hectare working expenditure incurred by the sample growers for banana cultivation was Rs. 71170/- and of this, 75 per cent finance i.e. about Rs. 55,000/- needs to be provided as crop loan through institutional agencies. However, the existing per hectare scale of finance is Rs. 30,000/-. Due to inadequacy of crop finance, about 98 per cent of banana growers had taken advance from private traders with high rates of interest on the condition that the produce would be sold through them. It is, therefore, recommended that the per hectare scale of finance for banana cultivation be raised from Rs. 30,000/ to Rs. 55,000/-. |

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| Based on the 11 years data of 28 domestic markets on arrivals and prices of banana, Delhi has emerged as a major market for marketing of Jalgaon banana. However, there are certain domestic markets like Ranchi, Chandigarh, Amritsar, Simala, and Srinagar from North India in which per quintal average price was observed to be higher than the Delhi market. Besides, the system of gradewise loading of rail wagons be followed by market agencies. |
| **2002-2003** |
| The export performance of grapes indicated the potentials for export of grapes to Germany, Netherlands, UK and Sri Lanka. There is a need to reduce the inconsistency in the export of grapes to the countries such as Malaysia, Oman, France and Hong Kong, where the price realized was relatively high. |
| The export of pomegranates from India mainly to UAE and Saudi Arbia, which together shared 72 per cent of the total. The exports of pomegranate be diversified to cover the countries such as Hong Kong, UK, Belgium, Oman and Switzerland where the per kg price realized during the triennium 1999-2000 to 2001-02 was relatively high. There is also a need to reduce the inconsistency in export of pomegranate to the countries such as France, Oman and South Africa in which Indian pomegranates fetched better prices. |
| An economic evaluation of Watershed Development Programme in village Kangar of Ahmednagar district revealed an increase in irrigated area by 109 per cent, productivity of crops by 13 to 34 per cent, employment of human labour by 49 to 52 per cent with an internal Rate of Return of 16.87 per cent and B:C Ratio of 1.33 at 10 per cent discount rate indicating its economic viability. It is, therefore, recommended that such type of programmes be implemented on a wider scale to cover all the potential areas. |
| **2003-2004** |
| Based on the sugar exports during 2001 to 2003, the countries like Belgium ( Rs. 22.71 to Rs. 31.57), Portugal ( Rs. 15.60 to Rs. 18.04), Egypt ( Rs. 11.41 to Rs. 16.71) and Ghana ( Rs. 15.76 to 16.46) had imported the Indian sugar at higher per kg price with meager quantities ( 0.01 to 1.56 per cent) which suggests for increasing the quantum of export of Indian sugar to these four countries. |
| **2004-2005** |
| There existed a per hectare yield gap (Expected yield - Average yield) in the production of kharif groundnut, soybean and sunflower to the extent of 51, 39 and 64 per cent, respectively in Western Maharashtra. One of the reasons for such a yield gap was the less utilization of inputs than the recommended levels. The observed input use gap for these oilseed crops was 70-82 per cent in manure, 35-65 per cent in nitrogen and 42-84 per cent in phosphorus. Besides, 70 per cent gap in utilization of potash was noted in sunflower. In order to reduce the gap in yield, there is a need to educate the farmers to use the recommended levels of inputs in the production of oilseeds. |
| The economic study on drip irrigation system for sugarcane crop revealed an increase in productivity by 27 per cent and net returns by Rs. 20234/-per hectare. The investment on drip irrigation system was found to be economically viable since BCR was more than unity (1.51 and |

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| 1.25 with and without subsidy). It is, therefore, suggested that, the subsidy being provided by the Government be continued to have a drip system for irrigation on more acreage in order to economize the use of irrigation water. |
| The economic study on drip irrigation system for guava crop revealed an increase productivity of guava by 19.65 per cent and per hectare net returns by Rs. 18440/- besides the saving of water by 44.86 per cent as compared to non- drip guava orchards. The B : C ratio and IRR on the investment in drip set worked out to 1.48 and 39.01 per cent showing its economic viability. It is, therefore, recommended that the use of drip irrigation system be encouraged among the farmers for efficient use of irrigation water. |
| **2005-2006** |
| There existed a gap between demonstration yield and average farm yield for suru, pre-seasonal, adsali and ratoon sugarcane to the extent of 17,23, 36 and 25 per cent, respectively in Western Maharashtra, partially due to imbalanced (excess or low) use of manure and fertilizers than the recommended levels. It is, therefore, suggested to increase the awareness amongst the sugarcane growers to use the recommended levels of manure and fertilizers. |
| The minimum support prices and input prices of jowar and bajra for the period from 1992-93 to 2002-03 revealed that the increase of 102 and 106 per cent in minimum support prices was not enough to cover 229 and 218 per cent increased prices of inputs of these crops. Therefore, it is, recommended that the efforts need to be made to maintain the parity between minimum support prices and input prices to safeguard the interests of jowar and bajra producers in Maharashtra. |
| Citronella oil processing unit should be a multiprocessing (Nilgiri, Lemon grass, Pama roza, Patcholi, Davana, Jiranium etc.) unit with manufacturing of value added products (fragrance sticks, perfumes, mosquito repellent oil, soaps, etc ) so that the installed capacity of processing unit will be fully utilized and it will be economically viable. The area under citronella cultivation should be at least 10-12 ha for fulfilling the capacity of a processing unit. (One tone) |
| For the growth of grape wine industry, there is a need to increase the availability of grape wine varieties and expand the area under grape wine varieties. Moreover, for promoting the sale of grape wine, the grape wine should be excluded from the group of hard liquor beverages. |
| **2006-2007** |
| A study of input-output prices of pigeon pea, green gram, black gram and chick pea for the period of 10 years i.e. from 1993-94 to 2002-03 revealed that 94 to 104 per cent increase in minimum support prices was not enough to cover 140 per cent increase in input prices of these crops. It is, therefore, recommended that for protecting the interest of a pigeon pea, green gram, black gram and chick pea producer in Maharashtra, there is a need to maintain the price parity between minimum support prices and input prices. |
| **2007-2008** |
| The increase of 47, 60, 75 and 97 per cent in minimum support prices of sunflower, soybean, groundnut and safflower, respectively during the period of eleven years (1993-94 to 2003-04), have not been enough to cover 154 per cent increase in the inputs prices of these crops. It is, |

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| therefore, necessary to maintain the parity between rate of increase in minimum support prices and input prices by the Central Government to safeguard the interest of oilseed producers. |
| The parity indices of gross income to the cost of production in groundnut and soybean favoured the producers economically (>100), therefore, there is a scope to increase the area under these two crops in Maharashtra, for which special efforts are needed. |
| Since per worker employment and per hectare net profit generated under Crop plus Livestock farming system (CL) are higher by 38.38 and 66.37 per cent and Crop plus Livestock with Horticulture (CLH) farming system are higher by 39.27 and 55.81 per cent, respectively than only Crop system (C), it is recommended to have combination of enterprises under farming systems instead of a single enterprise by the farmers, in order to minimize the risk and uncertainty and thereby sustain the farming in Western Maharashtra. |
| **2008-2009** |
| In Western Maharashtra, due to adoption of above 75 per cent recommended levels of manures and N,P,K fertilizers , the yield gap of foodgrains viz, rabi sorghum, pigeon pea, chick pea, pearl millet and wheat was reduced by 133,62,42,38 and 22 per cent, respectively compared to 25 per cent adoption of these inputs. Therefore, it is recommended to increase the awareness amongst the foodgrain growers to use the recommended levels of these inputs. |
| The increase of 130 and 88 per cent in minimum support prices of sugarcane and Cotton during 1993-94 to 2005 – 06 is not enough to cover 177 and 267 per cent increase in the inputs prices of these crops. Therefore, it is, recommended that there is a need to maintain the parity between minimum support prices and inputs or there is a need to give adequate compensation to the producer so as to safeguard the interests of sugarcane and cotton producer in Maharashtra. |
| In Bahirwadi Watershed Development Project of Ahmednagar district, there has been an increase in irrigated area (21. 69 %), productivity of crops (20.11 %), employment (59.62 %) with B: C ratio of 1.49 and Internal Rate of Return (42.70 %). It is, therefore, recommended that the activity of watershed development programme be implemented on priority on a wider scale to cover all the potential areas. |
| **2009-2010** |
| A wide gap in the use of inputs (3.36 to 100 per cent) in the production of major pulses (Chickpea, Pigonpea, Geengram, and Blaackgram), has resulted in 39.12 per cent to 57.65 per cent reduction in yield. For bridging this gap, it is recommended that the farmers should be motivated for the use of recommended levels of inputs. |
| During 2008-09, the per worker employment and per hectare income of the Farmer Scientist Club members of MPKV, Rahuri have increased by 22,52and 44 per cent and 26, 43, and 49 per cent, respectively over 2004-05 under Crop +, Crop + livestock, and Crop + livestock + Horticulture farming systems. Moreover, Positive change was observed amongst 93 per cent club members in their knowledge and attitude towards agriculture. It is, therefore, recommended for expanding the activities and increasing the number of Farmer Scientist Clubs. |

| 2010-2011 |
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| The impact of Kolhapur Type (K.T) weir, in the Manori area of Ahmednagar district, reveled an increase in irrigated area, productivity of crops and employment generation. Therefore, the propaganda of Kolhapur Type (K.T) weirs be extended on a large scale. |
| The finding of last three years study of Datta, Muktipur and Bhairavnath, water users Societies showed that the functioning of these Water Users Societies according to the directives of Government resulted in to wide increase in area under cultivation, productivity of crops and employment generation on the beneficiaries' farms. Therefore, it is, recommended that all such societies should critically follow the directives of the Government. |
| **2011-2012** |
| It is recommended that the farmers should be made aware to follow the recommended package of practices of gram in Western Maharashtra, as due to medium and higher adoption of recommended package of practices for gram cultivation, the per quintal cost was reduced by 10 and 12 per cent and out put level have increased by 23 and 45 per cent, respectively over the low adoption groups. |
| It is, recommended to increase the awareness amongst the cash crop growers to use the recommended levels of the inputs in Western Maharashtra, as due to higher adoption of manure and fertilizers (N, P, K), the yield of cash crops viz; Cotton, Soybean, Onion and Sugarcane (Suru and Adsali) have increased by 124, 70, 92 and (48 and 58 per cent) respectively compared to the less adoption of these inputs. |
| It is recommended to expand the coverage and the activities of farmer Scientist Clubs established by Mahatma Phule Krishi Vidyapeeth, Rahuri in Western Maharashtra, as the per employment and per hectare income of the members have increased by 20,18,14 and 37,38,41 per cent, respectively under the Crop, Crop plus Livestock and Crop plus Livestock plus Horticulture farming systems. Further, there is positive change in knowledge, attitude and social status during the time period from 2004-05 to 2010-11. |
| **2012-2013** |
| As internal rate of return (IRR) on investment in Watershed Development Programme is greater than existing interest rate and benefit-cost ratio is greater than one hence, such type of programmes may be implemented wherever possible in the State. |
| The creation of additional employment opportunities through supplementary enterprise, agro-based processing industries and watershed development works in rural areas would contribute to ameliorate the economy of non- farm families. |
| Additional increase of 88 and 122 per cent in the yield levels and reduction of 17 and 33 per cent in the per quintal cost of cultivation in medium and high adoption groups respectively, was the result of adoption of recommended package of dry land technologies for *rabi* sorghum under HOPE project. Therefore, it is recommended that the farmers should follow the package of dry land technology for *rabi* sorghum.<br>**Dry land technology for *rabi* sorghum** |

- *Insitu* moisture conservation,
- Improved cultivar as per the soil depth,
- Timely sowing (15th September to 15th October),
- Interculturing (Thining and 2-3 hoeing)
- Integrated Nutrient Management
- Integrated Pest Management

## 2013-2014

The Comparative economics between small - medium and medium- high adoption group of gram production technology revealed that, the additional increase of 22 and 35 per cent in the output levels and reduction of 7 and 13 per cent in the per quintal cost was due to the adoption of university recommended gram production technology respectively. Hence, it is recommended that the farmers should strictly follow the university recommended package of practices. (2013-2014)

**Production Technology for Gram**

- Use of improved variety seed and seed treatment
- Optimum Sowing time
- Interculturing operations
- INM practices
- IPM practices

Comparative economics of grapes and raisin sell in the Scarcity area revealed that the benefit: cost (B: C) ratio of raisin sell (1.72) was more than the sell of fresh grapes (1.24), hence it is recommended that grape growers in Scarcity zone should preferably undertake raisin making.

The economic study of farm ponds in Ahmednagar district revealed an increase in net income (63.95 %), irrigated area (9.86 %), productivity of bajara (16.91 %), cotton (10.07 %), pomegranate (5.94 %), sweet orange (3.54 %), sapota (2.08 %) and number of crossbred cows (33.33 %). Therefore, it is recommended that the construction of farm ponds on large scale be encouraged among the farmers in Drought Prone Area of the state.

## 2014-2015

The additional increase of 48 and 77 per cent in the output levels and reduction of 19 and 30 per cent in the per quintal cost of cultivation in medium over low and in high over medium adoption group was the result of adoption of recommended package of practices for *kharif* groundnut cultivation. For the output maximization and cost reduction, it is recommended that the farmers must adopt the recommended package of practices.

The additional increase of 32 and 54 per cent in the output levels and reduction of 12 and 24 per cent in the per quintal cost of cultivation in medium over low and in high over medium adoption group was the result of adoption of recommended package of practices for safflower cultivation. For the output maximization and cost reduction, it is recommended that the farmers must adopt the recommended package of practices.

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| The additional increase of 37 and 50 per cent in the output levels and reduction of 14 and 20 per cent in the per quintal cost of in medium over low and in high over medium adoption group was the result of adoption of recommended package of practices for sunflower cultivation. For the output maximization and cost reduction, it is recommended that the farmers must adopt the recommended package of practices. |
| The additional increase of 31 and 49 per cent in the output levels and reduction of 10 and 21 per cent in the per quintal cost of cultivation in medium over low and in high over medium adoption group was the result of adoption of recommended package of practices for soybean cultivation. For the output maximization and cost reduction, it is recommended that the farmers must adopt the recommended package of practices. |
| **2015-2016** |
| The incremental cost-benefit ratio of value addition in the processing of Aonla candy, Jamun juice and Phule (Mango) drinks were 1.96, 1.23 and 1.15, respectively, which were more than direct fruit sell. It is recommended that the farmers and agri-entrepreneur be encouraged to process these value added products on large scale for better profit margin. |
| The benefit-cost ratio of high capital intensive capsicum cultivation was 1.94 and 2.04 while the IRR was 38.84 and 36.13 per cent for polyhouse and shed net, respectively. It is recommended that, farmers be encouraged to cultivate the capsicum under polyhouse and shed-net cultivation for better profit margin. |
| The high capital intensive gerbera cultivation in all types of polyhouse units were found economically viable as the magnitudes of B: C ratio was more than unity (1.10 to 1.24) and IRR was more than market rate of interest (25 to 42 %). It is recommended that farmers be encouraged to cultivate Gerbera under polyhouse for better returns. |
| **2016-17** |
| The farmers in Maharashtra State earned gross economic benefit of ` 368.12 crores and net economic benefit of ` 64.03 crores from improved *rabi* sorghum varieties during 1993-94 to 2014-15 released by sorghum research project, MPKV, Rahuri accompanied with improved technology transfer by MPKV, Rahuri and Agricultural Department. It reveals that an additional investment of one rupee in *rabi* sorghum research generated additional income of ` 6.20 with 34.61 per cent Internal Rate of Return (IRR), indicating investment in rabi sorghum research generated substantial returns. Therefore, it is recommended that the State Government should allocate substantial funds to public research in *rabi* sorghum for productivity enhancement in ensuing food and fodder security. |
| The increase of **189.86 per cent** in Minimum Support Prices of cotton during 1996-97 to 2013-14 is not enough to cover increase in **476.87 per cent** increase in the inputs prices. Therefore, it is recommended that there is need to maintain the parity between Minimum Support Prices and input prices or there is need to give adequate compensation through incentives to the producers, so as to safeguard the interest of cotton grower in Maharashtra. |

## 2017-18

The percentage increase in medium over low and high over medium adoption group, respectively in employment, production, income levels and reduction in per quintal cost was the result of adoption of recommended package of practices of MPKV, Rahuri for major cereals is as below. For the cost reduction and output maximization, it is recommended that the farmers shall adopt the recommended package of practices.

(Figures in Percent)

| S.N. | Crop | Technology Adoption Group | Increase in | | | Reduction in Cost of cultivation |
|---|---|---|---|---|---|---|
| | | | Employment | Production | Income | |
| 1 | Paddy | i. Medium over Low | 16 | 15 | 12 | 4 |
| | | ii. High over Medium | 26 | 26 | 29 | 7 |
| 2 | Wheat | i. Medium over Low | 19 | 24 | 27 | 4 |
| | | ii. High over Medium | 27 | 38 | 29 | 19 |
| 3 | Rabi Jowar | i. Medium over Low | 10 | 13 | 9 | 2 |
| | | ii. High over Medium | 24 | 56 | 47 | 9 |
| 4 | Bajra | i. Medium over Low | 27 | 28 | 16 | 11 |
| | | ii. High over Medium | 31 | 34 | 19 | 19 |

The pomegranate growers in Maharashtra earned gross returns of ` 21,427 Crores and net economic returns of ` 6,428 Crores from recommended Bhagwa & released Phule Bhagwa Super varieties released by MPKV, Rahuri during the period of 12 years (2004-05 to 2015-16). Further it revealed that an investment of one rupee in pomegranate research and extension generated income of ` 21 with 40 percent Internal Rate of Return (IRR). Therefore, it is recommended that the substantial funds be provided for pomegranate research and extension activities.

The increase in Minimum Support Prices (MSP) of pigeon pea, chick pea, black gram and green gram was less than increase in inputs prices during 1996-97 to 2014-15 by 16, 25, 35 and 20 per cent, respectively. Therefore, it is recommended that there is need to maintain the parity between Minimum Support Prices and input prices of pulses.

| 2018-19 |
|---|
| The preparatory tillage, nutrient management, protective irrigation, variety and plant protection contributed around 30, 25, 23, 16 and 6 per cent, respectively to the yield of red gram. It is therefore, recommended that farmers shall adopt these technologies to the higher extent to get higher returns. |
| The farmers in Maharashtra earned gross returns of ` 100787and ` 31681 crores, whereas, net benefit of ` 11059 and ` 2215 crores from university released Co-86032 and CoM-265 varieties during 22 years (1995-96 to 2016-17) and 9 years (2008-09 to 2016-17), respectively. Further, it is revealed that an investment of a rupee in sugarcane research and extension generated income of ` 31 with 41 percent Internal Rate of Returns (IRR), respectively. Therefore, it is recommended that the substantial funds shall be provided for research and extension in sugarcane. |
| For kharif cotton, under drip irrigation, there are 28, 28 and 14 per cent saving in water, electricity and labour units, respectively and 47 per cent increase in productivity as compared to surface irrigation. Therefore, it is recommended that the cotton cultivators be encouraged to adopt drip irrigation. |
| Since, 1996-97 to 2015-16, the increase in Minimum Support Prices (MSPs) of Bajra, Paddy and Wheat were less than the increase in inputs prices by 23, 27 and 48 per cent, respectively. Therefore, it is recommended that there is need to maintain the parity between Minimum Support Prices and input prices or there is need to give adequate compensation to the producers in order to safeguard the interest of cereal producers of Maharashtra. |

## Publications

| Sr. No. | Particulars | Number |
|---|---|---|
| 1 | Projects | 709 |
| | **Publications** | |
| 2 | Books | 30 |
| | **Articles (2006 onwards)** | |
| 3 | Technical Articles | 119 |
| 4 | Scientific Articles | 153 |
| 5 | Popular Articles | 433 |
| 6 | Radio Talk | 43 |
| 7 | T.V. Talk | 09 |

# Students Placement Profile

## Student Performance in National Examinations

| Year | Patent Received | ARS | NET | SRF |
|---|---|---|---|---|
| 2013-14 | - | - | 01 | - |
| 2014-15 | - | - | - | - |
| 2015-16 | - | - | - | - |
| 2016-17 | - | - | 01 | - |
| 2017-18 | - | - | 03 | - |
| 2018-19 | | | | 01 |
| Total | - | - | 04 | 01 |

## Employment for Competitive Examination

| Sr.No. | Name of the alumni | Year | Post |
|---|---|---|---|
| 1 | Dhapate Niketan Krushnaji | 2013 | Agriculture Officer |
| 2 | Jaware Bhausaheb Ratan | 2013 | Police Sub Inspector |
| 3 | Kadam Pradip Rajaram | 2013 | Taluka Agriculture Officer |
| 4 | Patil Vikas Pandurang | 2013 | Agriculture Officer CBI |
| 5 | Pawar Abhijeet Vitthal | 2013 | Agriculture Field Officer |
| 6 | Garje Datta apparao | 2013 | Agril. Officer |
| 7 | Garje Sambhaji Mahadev | 2013 | Agriculture Field Officer |
| 8 | Randive Ajay Anna | 2013 | Agriculture Field Officer |
| 9 | Siddarth Prabhakar | 2013 | Agriculture Field Officer |
| 10 | Mr.Ransing Suhas Vishwas | 2013 | T.O (Agril. MPSC) |
| 11 | Mr.Zendage Hunumant Kondiba | 2014 | IAS, UPSC |
| 12 | Miss.Tarade Ankita Dilip | 2014 | Range Forest Officer |
| 13 | Miss. Dhole Sonam Gajanan | 2014 | Range Forest Officer |
| 15 | Vidhate Namdeo Sudhakar | 2014 | Agil. Field Officer Bank |
| 16 | Miss. Jagdale Komal Ashok | 2014 | Agil. Field Officer |
| 17 | Dhavale Atul Ashok | 2014 | Mandal Krushi Adhikari |
| 18 | Miss. Mulla Khushabu Babalal | 2014 | Naib Tahsildar |
| 19 | Mr. Chavan Yuvraj Ashru | 2015 | Police Sub Inspector |
| 20 | Mr.Kundalkar Vikas Appaso | 2015 | Police Sub Inspector |
| 21 | Nalkande Rahul Shahaji | 2016 | Police Sub Inspector |
| 22 | Raypure Priyanka Giridhar | 2016 | Bank Bank (Jr.Agril.Officer) |
| 23 | Mr. Sable Vaibhav | 2016 | Chief Officer |
| 24 | Miss. Raypure Priyanka | 2016 | Agril. Officer |
| 25 | Miss. Meena Priyanka | 2016 | Agril. Officer |
| 20 | Mr. Lande Nandkishor | 2016 | Agril. Officer |
| 21 | Mr. Hurde Umesh | 2016 | Agril. Officer |
| 22 | Mr.Ravindra Pawara | 2016 | Food Corporation of India |
| 23 | Mr. Kale Kishor | 2016 | Agril. Assistant |

| | | | |
|---|---|---|---|
| 24 | Miss.Kalpana Rathod | 2017 | AO, Agril. Deptt. |
| 25 | Mr.Sumit Yelmar | 2017 | AO, Agril. Deptt. |
| 25 | Kadu Avinash Ashok | 2017 | Clerk SBI |
| 26 | Chaudhari Sagar Nimba | 2017 | Agriculture Field Officer |
| 27 | Miss. Jadhav Monali Anna | 2017 | Agriculture Field Officer |
| 28 | Duthade Rahul Tulashiram | 2017 | Agriculture Field Officer |
| 29 | Bachute K.J. | 2018 | Agriculture Field Officer |
| 30 | Miss.Vidya Patil | 2018 | Agriculture Field Officer |
| 31 | Mr. Kandhale S.A. | 2018 | Agriculture Field Officer |
| 32 | Miss. Khombe D.T. | 2019 | Agriculture Field Officer |
| 33 | Miss.Duduskar P.R. | 2019 | Agriculture Field Officer |

**Other Employment (2013-2018):**

| **Sr. No.** | **Particulars** | **No. of Student** |
|---|---|---|
| 1 | Entrepreneurship | 06 |
| 2 | Academic careers | 13 |
| 3 | Industrial Job (Marketing& financing) | 04 |
| 4 | Farming | 29 |

## Contact Details


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|---|
| **Head, Department of Agricultural Economics,** |
| **Mahatma Phule Krishi Vidyapeeth, Rahuri- 413 722,** |
| **Dist. Ahmednagar (MS)** |
| **Office : (02426) 243236, 243777** |
| **Fax: (02426) 243257 / 243757** |
| **E mail: hodecon_mpkv@rediffmail.com** |