IAUA NEWS

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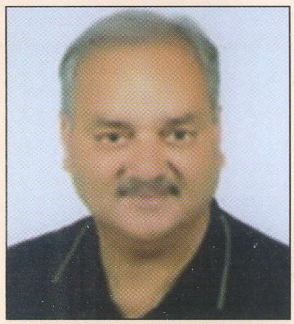
NEW VICE - CHANCELLOR

Dr Vijay Singh Thakur takes over as VC, DrYSPUHF, Nauni



Dr Vijay Singh Thakur

Dr Vijay Singh Thakur assumed the charge of VC, Dr Y. S. Parmar University of Horticulture and Forestry, Nauni, Solan (H.P.) on 26 July 2013.

He was born on 12 June 1959 in village Kohlara, district Shimla, Himachal Pradesh. He passed higher secondary from H.P. Board of School during 1976; B.Sc. and M.Sc. from H.P.K.V., Palampur in 1981 and 1983 respectively; and Ph.D. in 1987 from Dr Y. S. Parmar University of Horticulture and Forestry, Nauni, Solan. He received the ICAR Junior Scholarship and Senior Scholarship, and was able to complete his Post doctorate degree from Horticulture Research International, East Malling, U.K. on Disease Forecasting and Simulation Techniques during 1994. Dr Thakur has been associated with teaching, research and extension education for 25 years. He was Associate Director at Regional Horticultural Research Station, Mashobra, Shimla (1995 to July 2013) and Visiting Scientist to Horticulture Research International, U.K.(1994), Hungary and Germany and (2002) the U.S.A. and China (2004). He visited 20 countries for various scientific activities. Besides, he is Post-Doctorate Fellow of International Bilateral Scientific Collaborative Exchange Programme, the U.K. and Indian National Science Academy.

Dr Thakur is an expert on temperate fruit-diseases management. He did research on 32 research projects funded internationally and nationally. He specialized in research on epidemiology, weather monitoring, mode of action and application of pesticides as well as integrated management of all major diseases and insect-pests. He achieved successful forecast and management of apple scab, apple blotch and red spider mites through Integrated Pest Management techniques. Dr Thakur published 92 research papers, 34 book chapters, 22 review articles, 6 technology books, 1 CD-ROM and 105 extension bulletins or articles on apple. He received the first European Commission funded collaborative research project on 'Sustainable production of apple in Asia', wherein 11 weather monitoring stations and hi-technology laboratories for diseases and insect-pest forewarning were established. His major research contribution is on control of apple scab disease, which is one of the biggest achievements for the welfare of farming community of the state.

Prof Manoranjan Kar , VC, OUAT, Bhubneshwar

Prof. Manoranjan Kar

Prof. Manoranjan Kar joined as Vice-Chancellor of Orissa University of Agriculture and Technology on 17th March, 2013. He was born on 21April 1955 in district Kendrapara, Odisha. A brilliant scholar from childhood, he obtained his B.Sc.(Agric.) and M.Sc. from OUAT, Odisha during 1976 and 1978 with distinction, and Ph.D. in Plant Physiology in 1990 from the IARI, New Delhi. He became Professor in 2001. He headed the Department of Plant Physiology and Agricultural Biotechnology before being posted as Director, Planning, Monitoring and Evaluation, OUAT, in 2011. He also officiated as Dean, Students' Welfare, and was selected to the post of Dean, College of Agriculture, in August 2012. Prof. Kar guided 15 M.Sc. (Agric.) and 4 Ph.D. students and co-guided 95 PG or Ph.D. students. He published 90 research articles in reputed scientific journals and also wrote 8 books and chapters.

He received many awards such as Gold Medal in M.Sc. (Agric.), Plant Physiology. Senior Research Fellow of the ICAR; Visiting Fellow, Indian National Science Academy, New Delhi; Best Teacher Award OUAT (2009), Best Agricultural Scientist (2013) by Chalachitra Jagat, Odisha.

Dr Kar is a member of Board of Studies of Banaras Hindu University; Panel Member for the selection of Professors of Assam Agricultural University, and Ph.D. Examiner in many universities.

He is a Life Member of many professional societies, such as: Indian Society of Plant Physiology and Indian Society of Physiology and Biotechnology.

Focus on Universities: Events and Achievements

Deemed-to-be-Universities

INDIAN VETERINARY RESEARCH INSTITUTE, IZATNAGAR

Commercialization of IVRI technologies

Various technologies of the IVRI were commercialized to different entrepreneurs of Tamil Nadu, Kerala, Madhya Pradesh and Uttar Pradesh. On this occasion, eight memoranda of understanding (MoUs) were signed between Director, IVRI and the entrepreneurs for the following topics:

- "Ready-to-Cook milk chips" and "Chicken-meat-chips" technologies were commercialized to M/s Royal Food Corporation, Meerut on 4 July 2013 at IVRI, Izatnagar.
- "Low-cost multiplication technology of salt-tolerant bio-growth enhancers for increasing the productivity of agri-horti crops in normal and sodic soils" technology was commercialized to M/s Krishicare Bioinputs, Tamil Nadu on 12 July 2013 at NASC complex, New Delhi.
- "Non-structural protein 3ABC-based diagnostic assay (ELISA) for foot and mouth disease to differentiate infected from vaccinated animals (DIVA)" and "A rapid test for detection of non- structural protein (NSP) 3ABC antibodies from foot and mouth disease virus-infected animals technologies" were commercialized to M/s Ubio Biotechnology Systems Pvt. Ltd, Cochin, (Kerala) on 17 July 2013 at NASC Complex, New Delhi.
- "Low-cost multiplication technology of salt tolerant bio-growth enhancers for increasing the productivity of agri-horti crops in normal and sodic soils" technology was commercialized to M/s Jayvions Agri-Tech, Ghaziabad and M/s Allwin Industries, Pithampur, dist. Dhar, (M.P.) on 18 July 2013 at NASC Complex, New Delhi.
- "Chicken meat chips" technology was commercialized to Mr Abhishek Sharma, Faridpur, Bareilly on 17 September 2013 at IVRI, Izatnagar.

"Advances in stem-cell therapy in livestock and pets"

A 2 week national training on "Advances in stem cell therapy in livestock and pets and its business potential", funded by the ICAR, New Delhi under National Agriculture Innovation Project (NAIP) and organized by the Centre of Advanced Faculty Training in Veterinary Physiology was held during 16-29 July 2013 at Division of Physiology and Climatology, Izatnagar. It was attended by 14 participants from different SAUs, DUs, national research institutes and colleges from different states of the country.

The chief guest, Prof. Amresh Kumar, Director General, Khandelwal College of Management Science & Technology, Bareilly, highlighted the importance of stem-cell therapy and its commercial use, which is the need of the hour in veterinary sciences.

Interface meeting with veterinary officers of U.P.

An Interface meeting with the veterinary officers of Uttar Pradesh, organized by the Joint Directorate of Extension Education was held at Izatnagar on 23 August 2013. It was attended by 56 field Veterinary Officers from different parts of Uttar Pradesh.

In his introductory address, Dr Triveni Dutt, Joint Director (EE) laid stress on the need of strong linkage between the IVRI and Department of Animal Husbandry for effective transfer of technologies developed by the institute.

Golden jubilee year celebration of Division of Pathology

The Division of Pathology, began its Golden year celebration by organizing a seminar on "In quest of understanding pathology and pathogenesis at macro and nano levels and striving for better animal health" at Izatnagar on 6th September 2013. It was organized in collaboration with the local chapter of Indian Association of Veterinary Pathologists, Izatnagar.

Prof. Gaya Prasad, the chief guest emphasized the importance of veterinary pathology in disease investigation and appreciated the significant contributions made by the Division of Pathology in understanding the pathology and pathogenesis of important animal and poultry diseases and in the development of various diagnostic tests and vaccines. On this occasion, the guest of honour, Dr J.M. Kataria, Director, Central Avian Research Institute, Izatnagar, also shared his views and thoughts on Avian disease.

Universities

University Profile

BIRSA AGRICULTURAL UNIVERSITY, RANCHI

Setting up of university

Birsa Agricultural University was established through an act of the legislature of Government of Bihar on 26 June 1981, after its formal inauguration by the then Prime Minister of India, Smt. Indira Gandhi; which was later adopted by Government of Jharkhand. The university was created with great efforts of late Shri Kartik Oraon, an experienced parliamentarian and social leader of Chhotanagpur region. It was named Birsa Agricultural University in the honour and memory of the outstanding and well-known freedom fighter, Bhagwan Birsa Munda, who rendered remarkable selfless service for the benefit of poor tribal people.

Administration building

Inauguration by Smt. Indira Gandhi

Main objectives

- To develop academically qualified human resource through U.G., P.G., Ph.D. and other academic programmes.
- To conduct basic, strategic and need-based area-specific applied research in Agriculture, Veterinary Sciences, Forestry and Fisheries and to develop technologies relevant to farming community for livelihood security and higher farm income.
- To help the state in optimizing the use of inputs and exploiting the genetic potential of crops, forestry and livestock resources.
- To promote the application of modern agricultural technology through entrepreneurship development and for improving the agricultural situation of the state and socio- economic status of scheduled tribes and other weaker sections of the society through various extension programmes.
- To organize need-based training programmes for the officials, Extension functionaries of State Departments, other organizations and farmers.
- To develop collaborative linkages with government undertakings as well as national and international organizations for sharing and improving university resources.
- To help and provide technical guidance to the state government for development of agriculture in the state.

Crop Varieties Released and Recommended

Rice:

Birsa Dhan101, Birsa Gora102, Birsa Dhan103,Birsa Dhan104, Birsa Dhan105, Birsa Dhan106, Birsa Dhan107, Birsa Dhan108, Birsa Dhan109, Birsa Vikash Dhan110, Birsa Vikash Dhan111, Rajendra Dhan202, Birsa Dhan201, Birsa Dhan202, and Birsa Vikas Sugandha1 and Lalat and. Birsamati: Its plant height is approx 95 cm and it is suitable for rainfed medium-lowland. It is resistant to all major pests and diseases. It is aromatic and has long slender grain with medium maturity (130-135 days). It has yield potential of 40-45 q/ha.

Birsa Vikash Dhan - 203: It is suitable for transplanting in drought prone medium land of Jharkhand under rainfed condition. It is moderately resistant to blast, bacterial leaf blight and Helminthosporium spots, Stem borer and Gundhi bug under field conditions. It is sown both by direct seeding and transplanting. The yield potential is 40-45 q/ha.

Wheat

Birsa Gehun - 3: Its plant height is 90-95 cm., it matures in 110-115 days, is tolerant to drought and performs well under limited irrigated condition (3 irrigations). It is resistant to rust and leaf blight. The grain has 12.30% protein with sedimentation value 39.5 m. Its yield potential is 40 q/ha.

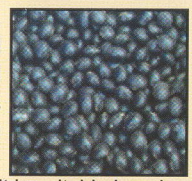
Maize: Birsa Makai-1 and Birsa Vikash Makka-2 (BVM-2) and.

Suwan Composite-1: Its plant height is 200 cm and seed colour orange yellow. It matures in 95-100 days. It is moderately resistant to stem borer, banded leaf and sheath blight and leaf blight. Its yield potential is 45-50 q/ha.

HQPM 1: Its plant height is 190 cm and grain colour yellow. It is moderately resistant to stem borer and resistant to leaf blight. It has high- tryptophan and lysine content in grain. It matures in 100-110 days. The yield potential is 55-60 q/ha.

Finger millet:

A-404: Its plant 100-115 cm high, with incurred panicle. It matures in 115-120 days under transplanted condition and 105-110 days under direct-sown condition. It is moderately resistant to blast and fairly tolerant to drought, and suitable for rainfed upland soils. Its yield potential is 36.00 q/ha.



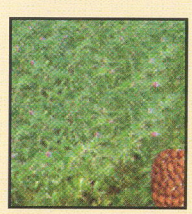
Pigeon pea Birsa Arhar-1: Its Plant height 200-220 cm, and matures in 180-190 days. It is suitable for upland conditions. It is resistant to wilt disease under field condition and is moderately resistant to pod borer. It is also tolerant to water stress the yield potential is15-20 q/ha.

Blackgram Birsa Urid 1: Its plant height is 28 cm and it is suitable in upland soils of Jharkhand. It is resistant to YMV and powdery mildew disease, and it matures in 81 days. Its yield potential is -15-18 q/ha.

Soybean Birsa Soybean-1: It is a black-seeded variety, which matures in 112-115 days. Its plant height is 49-55 cm. It is recommended for timely sown, rainfed upland condition. It is moderately resistant to bacterial postule and bacterial blight, resistant to mosaic and Cercospora leaf spot. Its protein content is 40% and oil content is 20%. It yield potential is 28 q/ha.

Birsa Safed Soybean - 2 :It is a white-seeded variety, which matures in 105-107 days. Its plant height is 60-63 cm. It is resistant to lodging and shattering, and is responsive to fertilizer application. It is suitable for early sown conditions. It is tolerant to bacterial postule and frog eye leaf-spot, moderately resistant to Cercospora leaf-spot and immune to target leaf spot diseases, and also tolerant to blue beetle and defoliator (Bihar hairy caterpillar) pest. Its protein content is 40% and oil content is 17%. The yield potential is 30 q/ha.

Niger:



The major varieties are: Birsa Niger, Birsa Niger, Birsa Niger, Pooja and.

Gram Birsa Chana -3: Its plant height is 41 cm. It is suitable for irrigated and rainfed conditions. It is resistant to wilt disease and tolerant to gram pod borer. It has medium maturity (115-118 days). It has protein content 20-21% and yield potential 18-20 q/ha.

Groundnut:

The major varieties are: Birsa Groundnut 1, Birsa Groundnut 2, Birsa Groundnut 3, Birsa Bold, Birsa Groundnut 4.

Mustard

Shivani: Plant height is 125-130 cm and is early maturing (100-105 days). It shows tolerance to white rust and Alternaria blight and is resistant to Phyllody disease. It is also resistant to sawfly and moderately resistant to aphids. It has oil content 41-42%, protein content27%, linoleic acid16.3%, eicosenoic acid 6.0% and erucic acid 51.3%. The yield potential is 8-10 q/ha under rainfed condition, and 12-14 q/ha under timely sown irrigated condition.

Birsa Kulthi-1: Its plant height is 60-64 cm and it matures in 92-97 days. It is moderatery resistant to Microfemina leafblight. It is responsive in late-sown condition, with yield potential is 10q/ha.

Sugarcane

BO-147: It matures in 12 months. The cane is straight, whitish green, having normal to slightly swollen nodes, small to medium-size, round onion-shaped eye, and has erect leaves. It is suitable for upland and medium lands. It is tolerant to all major diseases and insect pests, especially red rot of sugarcane. The sucrose content is 16% in juice, and its yield potential is 80-100 t/ha.

Implements Developed and Popularized

Tillage Implements:

Among 12 cm board ploughs: Bihar junior plough, Sabash plough and Meston and Hill plough are most suited for this tract.

Birsa Ridger plough: is an iron plough, which can be used with advantage in place of Desi plough for tillage or puddling operations. It works as the furrow opener of the Birsa seed cum-fertilizer drill.

The Blade harrow: can be used when the field is fallow, and it is available in 30, 60 and 90 cm lengths, has 60 cm blade. It is ideal for a medium pair of bullocks.

Seeding Implements:

The main seeding implements developed by the universities are: dryland seeder, Birsa seed-cum-fertilizer drill, deep furrow seeder.

Interculturing Implements:

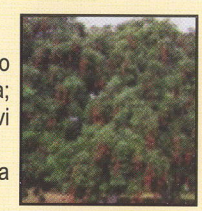
The main implements developed are: grubber, dryland weeder and Dutch hoe.

Harvesting and Post-harvest Implements:

The major implements developed are: Birsa potato-digger and tubular hand maize-sheller.

Horticultural Research

New Varieties



Four varieties were released in vegetables, one in flower and two in fruit crops, viz, French bean Birsa Priya; cowpea Birsa Sweta; sweet potato Birsa Shakarkand ; Colocasia esculenta, Birsa Arvi 1, Gladiolus Candyman.

The guava varieties are Birsa Chianki Guava 1, and Birsa Chainki Guava 2.

Lichi garden

Among Fruit varieties:

Mango varieties: Langra, Dasheri and Bombay. Litchi 'Purbi and Deshi' for the plateau region. Papaya 'Ranchi' Pusa Delicious' and' Pusa dwarf' for Chotanagpur and Santhal Pargana range.

The other fruits popularized are: aonla, ber, bael, & custard apple, kagzi lime, peach and pear,strawberry,sapota and jackfruit.

Dryland Agriculture

Soil and water conservation

The Soil and water conservation measures. The major measures are: A forestation of lands having slopes of more than 4% and soil depth not sufficient (less than 30 cm) for cultivation, Contour bunding and terracing of land having slopes of more than1%. Provision of soil-conservation structures in gullied lands for safe disposal of excess run-off water and also for their stability, Cultivation of land and sowing of crops across general slopes. Ploughing of the fields immediately after the harvest of previous crop for in-situ moisture conservation and Application of straw mulch @ 100 q/ha.

Cropping system

The choices of cropping systems are: Pigeonpea +maize, Pigeonpea + sorghum, Pigeonpea + rice, Pigeonpea + groundnut, Pigeonpea + soybean or Pigeonpea + blackgram.

Varieties

For Choice of Varieties during monsoon period in the area is generally of 110 days. It has been possible to bring down this period to 80-85 days in rice (Birsa Dhan-101) and ragi (Birsa Marua-1).

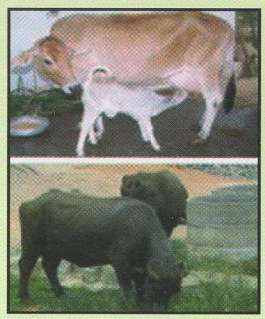
Acid soils Management

The uplands of the plateau region are acidic. Some group of crops such as pulses. soybean, groundnut and maize do not exhibit their yield potential in such soils. Lime or basic slag may be used to neutralize soil acidity. Lime requirement of the red loam soils of the region with sandy loam texture having 5.7 pH is 2.5 tonnes/ha of market lime. It is needed once in 3-4 years only and even 3-4 q/ha lime applied to each crop in furrow gives identical results.

Veterinary Science and Animal Husbandry

Animal Breeding

Cattle and buffalo: breeding



- Upgrading of local cattle in urban and peri-urban areas with Holstein- Friesian was recommended. It was also recommended to maintain only 50% inheritance of this breed for better milk production.
- Technologies for superovulation and induced lactation are:
- Crossbred cows may be superovulated following a regimen of prostagl and in F2 alpha and pregnant Mare Serum Gonadotrophin (PM SG).
- Infertile cows can be made to yield 8 litres milk a day for 300 days after administration of estradiol and progesterone regularly for 7 days, along with a few supporting hormones. However, Milk from such cows obtained during the first 3 weeks of lactation, should not be used.

Goat Breeding

The recommendations are:

Black Belgal Hybrid Beetle Goat

- Beetal half-breds should be utilized as an improver breed.
- Selection of goats for higher body weight at the market age could be made on the basis of 6 months body weight.

Management of reproduction and embryo transfer

The recommendations are:

- Buck semen can be frozen after washing and equilibration time of 4-6 hr at 4-6°C. Semen of Beetal buck is comparatively more cryo-resistant. A combination of glycerol and lactose provides maximum cryopreservation to the sperm. Better sperm motility and survival can be attained on adding caffeine 2 mM to extender for buck semen.
- The kids treated with 3 ml follicular fluid attained puberty significantly at earlier age (160.66 + 2.72 days) than those treated with Decaneurophen (186.50 t 4.50) or the untreated control (201.50 + 3.50 days).
- Oestrus-induction response was significantly higher (66.66%) in the goat treated with 3 ml follicular fluid than in the control group (20.00%).

Pig breeding

A new breed of pig named `T&D' was evolved, involving Tamworth, a British pig, and Desi pig. This pig was rated the best at national level competition.

Poultry breeding

The crosses of Desi x Black Australorp and Desi x Rhode Island Red showed 2-3 times more egg and meat production potential than of desi birds under village-managemental conditions.

Turkey

The main findings are:

- Hatchability of turkey eggs using Desi breed hens was found more than 80 per cent.
- In group rearing of both the sexes of turkey together, 100 per cent fertile eggs were obtained.

Rabbit

Pilot study on the adaptability and performance of exotic breeds Soviet Chinchilla, Grey Giant, New Zealand White and Angora was made. All the breeds except Angora could be reared under agro-climatic conditions of Bihar plateau.

Pisciculture

The findings are:

- The experiment conducted using pig manure in fish fry (seed) raising gave encouraging results. The survivability of common carp (Cyprinus carpio) obtained in pig-manured pond and cattle manured pond was 42% and 20% respectively.
- The survivability of Indian major carps and exotic carps fish seed was 33% in pig manure pond and 18% in cattle-manure pond even when the stocking rate was double in the former.
- Integrated fish farming (fish-cum-pig) was popularized in the rural areas.

Honey bee

The performance of indigenous honey bee (Apis indica) was found satisfactory, producing 8-10 kg honey per annum in very well managed conditions. However, the exotic bees (Apis mellifera) requires migration for optimum production (20-40 kg/annum).

Technologies of Industrial Importance

Drug Industry

Research conducted in Department of Pharmacology was found useful for development of indigenous drugs and establishing linkage with drug-manufacturing industries major ones are given below.

- Pharmacological screening of several medicinal weeds and plants such as Ficus glomerata, Arum colocasia, tomato leaves; Ipomoea carnea, custard apple (sharifa) seeds, bamboo leaves and karanj seeds was carried out. Some of them gave very promising effects. Ether extracts of sharifa seed and karanj oil showed potent insecticidal activity.
- Aqueous extract of bamboo leaves showed potent hypothermic activity and also ostentation of pentobarbitone-induced sleeping time in mice.
- Ipomoea cornea has showed paralytic effect skeletal muscle in goats.
- The aqueous extract of tomato leaves gave potent local anesthetic effect.
- Ether extract of karanj seed and soaberry has mollucicidal effect.
- Paste of root of Argemone mexicana effectively treated mange in dogs.
- Studies were conducted on bio-disposition, monitoring of residual plasma drug-level profiles in several species of animals and appraisal of kindtic drug interactions in ruminants, especially in goats.

These drugs are sulfonamide group, chloramphenicol, various nitrated furan derivatives, Ampicilin and Amprolium betamethazone, Nalidixic acid, Ciprofloxacin, Cefazoline, Norfloxacin and Mebendazole.

- Further, uterine transports of penicillin, Streptomycin, Gentamicin, Oxytetracycline and Sulfornamides were also monitored.
- For the first time a'Goat-fever model' was standardized and bio-kinetic evaluation studies of several compounds were conducted under febrile condition. Tissue and organ disposition of Sulfonamides, Ampicillin, Mebendazole and Nitrated furan derivative milk were also been studied. Both these studies were important from the public-health point of view.

Indigenous plants as immune-modulatory Agents

For immunomodulatory action of indigenous plants, viz. bengsag ,bBhiamla, gGiloy and germinated moony, Bengsag and giloy showed stimulates phagocytic system. They are also antiallergic and anti-inflammatory in action, phuiamla has antiallergic and anti-inflammatory effect; and germinated green gram (moong) has immune-adjuvant and general immunity-enhancing properties.

Environmental pathology due to pesticides

The threat on our ecosystem posed by residual effect of pesticides is being regarded an emerging environmental problems. Hence, a major area of research to which the faculty dedicated itself is environmental pathology. The following studies deserve mention.

- Chronic intoxication of organ chlorine (Aldrin), organophosphate (Monocrotophos) and synthetic pyrethroid (Cypermethrin and Fenvalerate) pesticides caused a marked reduction in appositional and osteonic bone growth but this toxicity was reversible.
- In contrast to the well known fact that organochlorines and organophosphates are neurotoxic pesticides, chronic poisoning of these pesticides was found associated with severe nephrosis.
- Subclinical lowdose exposure of different pesticides caused degenerative and narcotic changes in cellular elements of somniferous tubules and ovarian follicles, which may have adverse effect on the reproductive ability of the animals.
- Low-dose exposure of synthetic pyrethroid markedly decreased the tissue concentration of iron, copper, manganese and zinc in serum, kidney, heart, brain and lungs.
- Fenvalerate showed adverse effect on the absorption of these micronutrients through intestine.
- Binding of fenvalerate with mucosal-carrier protein was responsible for decreased absorption of trace elements through intestine.
- Low-dose exposure of organo-chlorines, organophosphates and synthetic pyrethroids suppressed the cellular, humoral and non-specific immunity in different animals.
- Low-dose exposure of pesticides interfered with the immune response invoked by different vaccines, and may be one of the cause of vaccination failure.

  Fenvalerate-induced decrease in concentration of micronutrients may be one of the pathways leading to immunosuppression, since micronutrients are the essential constituents of most of the enzymes involved in regulatory processes of immune reaction. This finding also suggested that micronutrients may have a curative and prophylactic importance in getting rid of the problem of immune suppression.

Forestry:

Energy plantation: Energy plantation experiment at three initial densities, i.e. *40,000,* 10,000 and 444 trees/ha with subabul *(Leucaena leucocephala)* showed maximum yield at the density of 10,000 trees/ha. With higher density the biomass was lower due to more mortality as well as poor growth.

Business planning development

Research and development network, networking with world class experts, business consultancy, technical consultancy, training and capacity building, office infrastructure, conference room, training hall, cattle-feed plant with capacity of 2 t/h etc were planned.

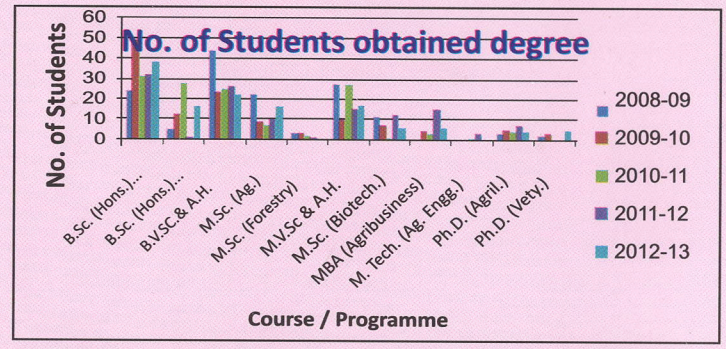
New establishment were: HUDA Agro farm, Tara, Palamu Sheikh Hamid-ur-Rahman Siddique for integrated farm on dairy, fishery and poultry.

Commercialization of technologies

Technologies were developed for production of remedies to give relief from pain. Two products commercialized are given here.

Birsin: From the extract of Charaigorwa (Vitex peduncularis), harmless formulation, Birsin, was prepared that gives relief from fever and bodyache. This invention has made a historical impact in the field of herbal-based antipyretic and analgesic medicines

Birsol: An aromatic liniment Birsol, has proved much effective in chronic joint pain, arthritis and local inflammation compared with many products in the market. It has Birsol liniment or oil, effective for chronic arthritis and inflammation. It is a mixture of many potential and qualitative herbs. Regular massage or topical application of Birsol gives relief in joint pain. It does not show any irritation such as that of turpentine oil or eucalyptus oil, any allergic symptoms on the skin. Instead, it gives pleasant and aromatic smell.

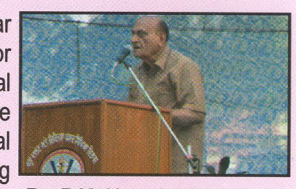


Pass-out status of students in different disciplines during 2008-13.

International collaborations: International collaboration were made between the IVRI and various foreign relevant constitutes such as APAARI, Thailand; CIMMYT, Mexico; IRRI, Philippines; ICARDA, Syria; ICRISAT; Hyderabad; ILRI, Syria; International Plant Nutrition Institute; Rockfeller Foundation, the USA; Mississippi State University, the USA; University of Queensland, Australia; AVRDC, Taiwan; SAARC, Dhaka; (Bangladesh) and International Potash Institute, Switzerland.

GURU ANGAD DEV VETERINARY AND ANIMAL SCIENCES UNIVERSITY, LUDHIANA

Seminar on Dairy Farming

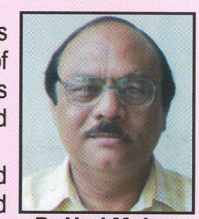


Dr. P.K. Uppal addressing

The GADVASU, Ludhiana organized a seminar on 'Dairy farming as a sustainable venture' for the farmers. Dr P.K. Uppal, Advisor of Animal Husbandry Government of Punjab was the chief guest. Inaugurating the seminar, Dr Uppal revealed that Punjab Government is stressing on dairy farming, which has become a sunshine area. The government is pushing very hard to promote it, is providing all the facilities including subsidies, soft loans as well as education to the adopting farmers. It raises the promise to turn Punjab into a dairy state.

In the seminar Dr A.L. Saini, Professor-cum-Head, Department of Livestock Production Management, delivered a lecture on 'Shelter management' in the context of modern dairy farming', and Dr R.S. Grewal, Animal Nutritionist, spoke on 'Balance feeding in dairy animals'. Dr H.K. Verma, Professor, Department of Veterinary and Animal Husbandry, Extension Education, shared his views on 'Common reproductive disorders and their management in dairy animals'. A Question-Answer session was also organized, where queries of farmers were also dealt. Dr Inderjit Singh, Director, told that the department is fully geared to provide all the support to the dairy farmers through subsidies through Punjab Dairy Development Board. Training programmes from eight centres of PDDB in Punjab are being provided along with full support to the trained personnels. Dr R.S. Sahota, Director of Extension Education, told that the university is having all-out efforts for promoting the livestock farming, especially dairy farming in the state through the structured approach. It is publishing literature for the farmers in local language and a monthly Punjabi magazine Vigyanak Pashu Palan. A farmer helpline No. (0161-2414026) and an Information centre are also functional for the farmers at the university. The seminar concluded with thanks giving remarks from the dairy farmers.

Tours of Scientists



Dr Hari Mohan Saxena

Dr Hari Mohan Saxena, Professor of Immunology, was appointed a Member of the Expert Panel on Vaccines of the European Society for Translational Medicine, which is a global non-profit platform for the advancement and progress of Translational Medicine.

Dr Saxena is the Principal Investigator of a UGC-funded project aimed at developing a new bacteriophage-based vaccine for Hemorrhagic Septicemia, an important infectious disease of cattle and buffaloes, which causes huge economic losses in the livestock sector. He was also the PI of the first project funded by Department of Biotechnology, Government of India, at GADVASU on

identification of the molecular target of the virus causing Infectious Bursal Disease in chickens. Dr Saxena received Award for Excellence in Research by Education Expo TV in the Faculty Branding Awards 2013 function, held in Kolkata. He was bestowed with Life-time Education Excellence Award and Medal by Business Development Association of India at New Delhi recently.

Presentation of Research Papers

Dr Mandeep Singh Bal, Assistant Scientist, Department of Veterinary Parasitology, College of Veterinary Science, attended the 24th International Conference of World Association of Veterinary Parasitology (2013) held at Perth, Western Australia. He presented his research work on "Polymerase chain reaction vis-a-vis parasitological techniques for diagnosis of Trypanosoma evansa infection in bovine" as oral poster presentation. Such molecular methods are more helpful in the diagnosis for better management of haemoprotozoa.

Dr Mandeep Singh Bal

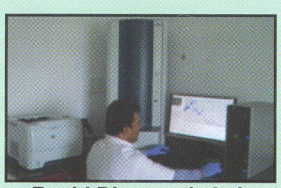
Training on livestock diseases

A national-level training programme on "Advances in diagnosis, -therapy and prevention of emerging and re-emerging diseases of livestock, was organized by Department of Veterinary Medicine at Ludhiana during on 8 October. Twenty five participants from 15 states of India are participating in it. The training course was inaugurated by Dr S.N.S. Randhawa, Director of Research and Dean, Postgraduate Studies. Dr H.S. Sandhu, Dean, College of Veterinary Science, was the guest of honour.

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR

Rapid Disease Diagnostic Laboratory at Udgir

The MALDI TOF Biotyper, state-of-art facility, one of its first kind of biotyper in veterinary diagnostics was recently installed at Rapid Disease Diagnostic Centre established under Rashtriya Krishi Vikas Yojana, at Department of Veterinary Microbiology, College of Veterinary and Animal Sciences, Udgir. On establishment, it will enable rapid identification of micro-organisms using MALDI-TOF (Matrix-Assisted Laser Desorption Ionization-Time of Flight) Mass Spectrometry to measure a unique molecular fingerprint of an organism.



Rapid Diagnostic Lab

Inventory of fish bio-diversity of Navegaon lake

The knowledge of the diversity and distribution of the fish fauna is essential for sustainable utilization and for designing and implementing conservation strategies of dwindling fishery resources. However, data on the fish fauna of Maharashtra is scanty, as most of the rivers and reservoirs have not been surveyed extensively, and checklists for individual rivers and reservoirs are not available.

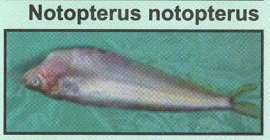
In this context, Department of Fisheries Biology, College of Fishery Science, Nagpur, in co-operation with Bhandara Nisarga va Sanskruti Abhyas Mandal, Bhandara, has taken up an initiative to document the fish fauna of Navegaon lake.

To identify and establish their phenotypic traits, monthly fish sampling on a regular basis was conducted for 1 year at the banks of Navegoan lake. During the study total 45 fish species belonging to 16 families were identified, and the specimens are preserved at the department laboratory. In addition database on the vernacular names of these species and their scientific names is also being created. Interactions with the local fishermen have provided valuable information on the three species, viz. *Anguilla sp.*, *Tor sp.* and *Labeo sp.*, as these have become extinct from the lake. These are excluded from the total 45 species identified during the present study. Also one exotic species was also identified in the lake.

Trichogaster lalia

Puntius sarana

Notopterus notopterus



Ompok bimaculatus

Channa marulis

Pranimitra Samman for Teaching

The Teaching Veterinary Clinical Complex of Nagpur Veterinary College, Nagpur, was bestowed with Pranimitra Samman for delivering prompt and excellent services to the needy people round-the-clock and for rendering the services to stray dogs. The award was instituted by People for Animals (NGO) and was presented in a grand function at the hands of Smt. Maneka Gandhi, the National President of the PFA in the presence of Shri Anil Sole, Mayor of Nagpur, Shri Nitin Gadkari, former Minister for PWD, Maharashtra, Hon'ble Ajay Sancheti, M.P. and other office bearers of the organization. Dr N.P. Dakshinkar, Head, Department of Clinic received the award on behalf of the TVCC.

Dr N.P. Dakshinkar, receiving award on behalf of TVCC

ORISSA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BHUBANESHWAR

Research findings

The following research findings were extended to the farmers.

- The OUAT rice cultures identified for release during the 48th Rice Workshop held at Srinagar during 13-17 April 2013 are OR 2331-14, suitable for semi-deep water condition, giving average yield of 38.7 q/ha and maturing in 145 days, and OR 2328-5, suitable for shallow-lowland condition, giving average yield of 58.3 q/ha and maturing in 135 days. Once these rice cultures are released, the problem of farmers cultivating rice in lowland conditions will be solved.
- The vegetable cultures in the pipeline for release include BB 09-1 and OB 11-1 of brinjal, which are resistant to bacterial wilt, with fruit yield of 250 q/ha and 350 q/ha respectively; BDT 09-1 of tomato, tolerant to bacterial wilt, with yield potential of 405 q/ha; BC 09-1 of chilli, with average fruit yield of 110 q/ha, BO 09-1 of okra, with average fruit yield of 75 q/ha; and tolerance to YMV disease; BBGH 09-1 of bitter gourd, with average yield of 55 q/ha, BAS 13-1 of amaranthus, giving yield of 260 q/ha; and BBOG 3-1 of bottle gourd, with yield potential of 330 q/ha.
- The paddy transplanter tested by OUAT has high field efficiency and maintains uniform and optimum plant population. With its use the yield increased by 20% and seed requirement decreased by 40%. The cost of nursery preparation and transplanting also decreased by Rs 2,000/ha.
- The university conducted 1,813 trainings, involving participation of 44,840 farmers and farm women, 379 trainings for 6,339 rural youth; and 212 trainings for 3,158 extension functionaries through its 31 KVKs.

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWAVIDYALAYA, GWALIOR

2nd Convocation

The second Convocation of RVSKV was held on 12 July 2013. H.E. the Governor of Madhya Pradesh and Chancellor of the University Shri Ram Naresh yadav, presided over the function. Dr R.S. Paroda, Chairman, Haryana Farmers' Commission and Trust for Advancement of Agricultural Sciences, the former Secretary to Government of India, Department of Agricultural Research and Education & Director-General, ICAR, New Delhi, delivered the convocation address. Dr Ram Krishan Kusmaria, Minister, Farmer Welfare and Agriculture Development, Government of M.P. was the guest of honour. Prof. A.K. Singh, Vice-Chancellor presented the university progress report. Total 520 students were awarded UG and PG degrees, and five students received gold medals. Dr B.S. Baghel, Dean, Faculty of Agriculture; Dr H.S. Yadav, Director of Research Services; Dr S.S. Tomar, Director of Extension Services; Dr R.L. Rajput, Director Instructions; Shri H.S. Mehar, Registrar, and Smt. Rajni Shukla, Comptroller, were present along with dignitaries on this occasion.

HE, the Shri Ram Naresh Yadav addressing the convocation

National Conference

Dignitaries (L-R): Dr Y.M. Kool, Shri K.K. Khare, Dr Gurbachan Singh, Prof. A.K. Singh, Dr H.S. Yadava releasing souvenir

A national conference on Making Agriculture Profitable was organized by RVSKVV, Gwalior and M.P. State Agriculture Marketing Board, Bhopal, during 26-27 July 2013 at Gwalior. The conference was inaugurated by Dr Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board, New Delhi; Shri K.K. Khare, Commissioner, Gwalior region was the guest of honour, and Prof. A.K. Singh, VC, presided over the function.

The following recommendations emerged from the deliberations of the conference:

- Cultivation of *ber* and *aonla* systems can increase the employment opportunities, monetary returns and soil quality.
- Adoption of organic cultivation of cereals, horticultural and other crops can increase the income of the farmers through export of certified organic products.
- Higher yield of pulses can be obtained by treating seeds with ammonium molybdate along with *Rhizobium* and Phosphate-solubilizing bacteria (PSB) culture.
- Farmers are advised to use pulse varieties resistant to wilt and root-rot for getting higher monetary returns.
- Non-arable lands should be utilized for growing fodder crops for milch animals.
- Seed replacement, balanced use of fertilizers (INM) and integrated pest management are the key factors for increasing production.
- Adoption of in-situ moisture conservation, sowing against slope, adoption of ridge and furrow technique, mulching, rain-water management, drainage, line treatment gabions, and use of established watershed-management techniques can help in mitigating the effect of climate change.
- Co-operative farming, inter-institutional collaboration including NGO's, participation of all stake- holders and technological interventions are essential for making agriculture profitable.

Foundation Day

Dignitaries (L-R) Prof. A.K. Singh, Dr Y.L. Nene, Dr D.N. Tiwari, Dr N.S. Tomar

The 5th foundation day of the university was celebrated on 19 August 2013. On this occasion Dr Y.L. Nene, former DDG, ICRISAT and Chairman, Asian Agri-History Foundation, Sikandrabad, delivered the key lecture. Prof. A.K. Singh, VC, highlighted the teaching, research and extension activities along with the developmental programmes of the university. Dr D.N. Tiwari, President, Utthan, Centre for Sustainable Development and Poverty Elevation, Allahabad, presided over the function.

UNIVERSITY OF AGRICULTURAL SCIENCES, RAICHUR

3rd Convocation

The third convocation of the university was held on 30 March 2013. Dr APJ Abdul Kalam, former President of India, was the chief guest for the convocation. In his address, he congratulated the out-going graduates and motivated them to work hard for agricultural prosperity of the country. He said that by 2020 our country would require production of more than 300 million tonnes of food-grains in view of population growth. To achieve this, the country has to embark on second Green Revolution, which will enable us to further increase the productivity in agriculture sector. He suggested that UAS, Raichur should include agriculture co-operation movement in its curriculum along with agricultural education and training. Dr B.V.Patil, VC, welcomed the gathering and briefed about the achievements made during the previous year. During the convocation, 137 graduate and 67 post-graduate degrees were conferred, and 28 gold medals were given to the meritorious students of B.Sc.(Agric), B.Tech (Agric. Engng.) and M.Sc. (Agric). Many awards such as Best Teacher, Researcher, Extension Scientist, Best Research Station, Best Supporting Staff, Best Field Assistant and Best Farm Labour Awards were given during the occasion.

Visit of Dr A.P.J. Abdul Kalam

The Science Education Trust and Science Centre, Raichur in collaboration with the university, organized an interaction programme of school children (more than 500) with Dr Abdul Kalam, former President of India on 30 March 2013 at the UAS auditorium. He shared his childhood experience and spoke about achievements of great scientists like Einstein, Graham Bell, Marie Curie etc. He asked the students on the questions related to space science, planet earth etc. To a question of Dr Kalam, 'What do you want to become in future?' the students showed varied responses such as IAS Officer, Doctor, Engineer, Politicians, Judges, Teachers, Agricultural Scientists etc. He advised these young students to utilize their youth power for development of the nation.

Krishi Vigyan Kendra

The sixth Krishi Vigyan Kendra of the university was established at Raddewadgi near Jewargi of Gulbarga district. Dr M. Mallikarjun Kharge, Minster for Labour and Employment, Government of India, inaugurated it on 12 January 2013. In his inaugural address, Dr Kharge said that the KVKs are intended to cater to the needs of farming community by demonstrating viable technology that helps build confidence among the farmers. He assured that Government of India is ready to support this kind of vocational training centres, which are committed for the growth and development of the farmers. Shri N. Dharm Singh, Member of Parliament, Bidar and former Chief Minister of Karnataka, were present on the occasion. Dr S. Prabhukumar, Zonal Project Director, ICAR, Bangalore gave a brief account of the status and role of KVKs in agricultural development in the country. Dr B.V. Patil, VC, spoke on the importance and relevance of new KVK in the area, and requested the farming community to utilize facilities like soil testing, timely advice on scientific farming etc., from the scientists of the KVK. Shri Allam Prabhu Patil, Member, Board of Management; Dr K.P.Viswanatha, Director of Extension, Dr S.B. Goudappa, Programme Co-ordinator, and other dignitaries were present on the occasion. Around 500 farmers witnessed the function.

Krishi melas

Honouring farmers and farmwomen during Krishimela at Gulbarga

'Farmer to farmer' interactive programme

To disseminate the improved agricultural and allied technologies to the farming community of Hyderabad-Karnataka region, Krishi melas were organized at Raichur (1-3 Dec. 2012), Gulbarga (8-10 Dec. 2012) Bidar (29-31 Dec. 2012) and B'gudi (5-7 Jan. 2013). Live demonstrations of crops, exhibition and farmer-to-farmer interactive programmes were highly appreciated by most of the dignitaries and farmers. During Krishi mela at Gulbarga, six farmers and five farmwomen of six districts of the region were honoured with Shreshta Krishika and Shreshta Krishimahila Awards, respectively. Fifteen information folders on agriculture and allied aspects were released for the benefit of farmers. All these Krishi melas made an impact on farming community in adopting improved technologies. Thousands of farmers visited these melas.

Awareness on Bio-fuel tree species and their use in amelioration of environment

The Bio-fuel Information and Demonstration Centre, Agricultural College, Raichur, organized an awareness programme for farmers on the importance of bio-fuel plants in amelioration of environment in October 2012 at College of Agriculture, Raichur. The programme was organized in collaboration with Karnataka State Bio-fuel Development Board, Bengaluru. The main objective of the programme was to motivate and educate the farming community about the cultivation of bio-fuel trees like simarouba, pongamia, etc., and their processing and marketing of biodiesel and its by products.

UTTRAKHAND UNIVERSITY OF HORTICULTURE AND FORESTRY, BHARSAR

Parthenium Need Eradiction

Parthenium Awareness Week was organized during 16-22 August 2013 by the KVK, Bharsar (Pauri Garhwal), under Uttrakhand University of Horticulture and Forestry, Bharsar, on the appeal made by Directorate of Weed Science Research, Jabalpur. Many activities were conducted during the entire week to create awareness among the farmers, scientists and staff members in respect of Parthenium weed control. Prof. Mathew Prasad, VC, inaugurated it.

On the last day of the week (22 August) the students and the staff including Dean, College of Horticulture and Director of Extension participated in uprooting Parthenium weed from the entire campus. The uprooted bio-mass was dumped in a composting pit for making compost, which would be used as organic manure on its complete decomposition.

Courses in College of Hill Agriculture

With the approval of State Government, about 8.090 ha land was transferred to the University at Chirbatia in Jakholi block of district Rudraprayag, for establishing College of Hill Agriculture in September 2013. To begin with, Certificate Course in Horticulture of 1 year duration is being started from October 2013 at the new campus for those affected by the natural disaster that struck the hill regions in Uttarakhand in June 2013.

VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH, PARBHANI

Farmers Rally

Dr Arvind Kumar, addressing Rabi farmers rally

The university organized Rabi farmers' rally on the eve of Marathwada Mukti Sangram Din, the 17 September 2012. Dr Arvind Kumar, DDG (Education), ICAR, New Delhi, was the chief guest. Dr K.P. Gore, VC, presided over the function. Shri Vijayraoji Kolte, Vice-Chairman, MCAER, Pune; Shri Sureshrao Warpudkar, former State Minister for Agriculture (Maharashtra), and Dr G.M.Bharad, former VC, DPDKV, Akola, were the guests of honour. A pack of programmes including an agricultural exhibition showcasing technologies and activities of the university, State Department of Agriculture, KVKs, NGOs, SHGs co-operative sectors and private companies; seminars on different topics and Shivarpheri attracted 2,500 farmers including farm women, youths, entrepreneurs and extension personnel. On this occasion Dr Arvind Kumar advised the farmers to take advantage of various programmes implemented and technologies generated by the university.

Inauguration of sale unit

Smt. (Prof.) Fauzia Khan, inaugurating Fruit processing sale unit

The Vidyapeeth started Fruit Processing Unit on pilot basis with Zain Agro Naturals. In this project various fruit-processing products are prepared. Fruit jam is produced on pilot basis and two containers of 20 tonnes strawberry jam are exported. In this centre 40-50 youth are employed. Smt.Prof. Fauzia Khan, State Minister of Maharashtra, inaugurated the sale counter of this processing unit on 13th July 2013.

Awards

INDIAN VETERINARY RESEARCH INSTITUTE, IZATNAGAR

Award to ZTM-BPD Unit of IVRI

Dr Gavhane

The Zonal Technology Management-Business Planning and Development (ZTM-BPD) unit of the IVRI, Izatnagar was awarded at the Agri-Tech Investors Meet-2013, held at NASC Complex, New Delhi during 18-19 July 2013. Dr K. Kasturirangan, Member, Planning Commission, in recognition commercialization of the maximum number of technologies generated from the NAIP projects. The Meet was organized jointly by the NAIP-ICAR and ICRISAT.

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR

Awards

Dr Gavhane Dnyaneshwar Shivaji, a 1st year (1st sem.) Ph.D. student of Department of Veterinary Pathology, Bombay Veterinary College, Mumbai received Inspire Fellowship of Department of Science and Technology Government of India, New Delhi, for completion of his PhD degree. The fellowship amounting to Rs. 2,79,000 per year, is sanctioned for 3rd year.

UNIVERSITY OF AGRICULTURAL SCIENCES, RAICHUR

Farmer-Scientist Award to innovative farmers

Shri Devendrappa Balotagi receiving Farmer-Scientist award

Shri Sharanabasappa Patil receiving Farmer-Scientist award

The university became the first in the country in honouring innovative farmers with Farmer-Scientist award during its convocation from 2010-11 onwards. The Award consists of a citation and cash prize of Rs 50,000. During 2012-13, 2 innovative farmers, viz. Shri Devendrappa S. Balotagi of K. Gonal village of Koppal district, and Shri Shanabasappa Patil, Halsultanpur village of Gulbarga district were honoured with this award during 3rd Convocation held on 30-3-2013. Shri Devendrappa Balotagi adopted silvi-horti-agriculture farming systems, in which a variety of fruit trees, timber, sandalwood are grown along with field crops. He is responsible for establishing fruit growers association and cold storage in Kustagi taluk of Koppal district. Shri Sharabasappa Patil, an ITI (Electrical) Diploma holder, who is involved in farming innovated several low cost equipments such as solar electrical fences, nipping instrument in redgram, tap irrigation with auto stop system for horticultural crops etc. He developed his farm in such a way that it can be used as Farmers' Field School. By considering these innovative ideas in agriculture, UAS, Raichur has honoured them with Farmer-Scientist award.

Medal to UAS, Raichur students

The ICAR, New Delhi and Jawaharlal Nehru Agricultural University, Jabalpur jointly organized the XIII Agri-Unifest at Jabalpur during 24-28 February 2013. The students of UAS, Raichur took part in almost all the events and were awarded silver medal in the event of group song and bronze medal in the event of patriotic song.

VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH, PARBHANI

Vasantrao Naik Memorial Award to Dr K.S.Baig

Dr K.S.Baig

Dr K.S.Baig, Soybean Breeder, of the university was awarded Vasantrao Naik Memorial award 2013 given by Vasantrao Naik Memorial Trust, Pusad, for his outstanding contribution in the development and release of soybean varieties. Shri Sunil Tatkare, Minister for Irrigation, Government of Maharashtra presented the award to him on 18 August 2013.

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