Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur - A Profile

Government of India with the assistance of the State Government established the biggest multi-campus university at Jabalpur, in the heart of India, named after the architect of modern India, Pt. Jawaharlal Nehru based on the recommendations of Radhakrishnan commission (1949) on the concept of establishment of Agricultural University. An approach was envisaged to narrowed down the gap between the experts and farmers through Joint Indo-American Team on Agricultural Research and Education in 1954-55 and 1959-60 on the patterns of Land Grant Colleges of USA. On October 2, 1964, Jawaharlal Nehru Krishi Vishwa Vidyalaya (JNKVV) was inaugurated by the then Union Minister for Information and Broadcasting Smt. Indira Gandhi.

The Central Administrative Office of the University is located about 7 km North of Jabalpur town on National Highway No. 7. The Universitywas created by an act of Madhya Pradesh Legislature passed in 1963.

The University had to part with the creation of sister universities Indira Gandhi Krishi Vishwavidyalaya (IGKV) at Raipur in 1987, Rajmata Vijayaraje Scindhia Krishi Vishwa Vidyalaya, Gwalior in 2008 and Nanaji Deshmukh Veterinary Science University, Jabalpur in 2009.

At present, the University holds an area of about 1544 ha of land. The area under the University jurisdiction contains alluvial, deep black, medium black, shallow and light black, mixed red and black, mixed red and yellow and skeletal or Gravelly soil. It is low to

medium in available nitrogen and phosphorus, and medium to high in available potassium.

At present, JNKVV encompasses five colleges of Agriculture (Jabalpur, Rewa, Tikamgarh, Ganjbasoda and Waraseoni, Balaghat); one Agricultural Engineering (Jabalpur); 4 Zonal Agricultural Research Stations (ZARS) (Jabalpur, Powarkheda, Tikamgarh, Chhindwara); 2 Regional Research Stations (Rewa, Sagar); 5 Agricultural Research Stations (ARS) (Dindori, Waraseoni, Garhakota, Sausar, Tendini) and 20 Krishi Vigyan Kendras (KVK) (Badgaon, Betul, Chhattarpur, Chhindwara, Damoh, Dindori, Harda, Jabalpur, Katni, Mandla, Narsinghpur, Panna, Powarkheda, Rewa, Sagar, Seoni, Shahdol, Sidhi, Tikamgarh, Umaria) representing 6 agro-climatic zones spread over 25 districts.

JNKVV has produced competent human resource for managing the activities of agriculture and allied sectors and also played a pivotal role in the growth and development

of agriculture in the State. Need based research and its rapid dissemination in all the part have led to several improved technologies, which over the year are visible in terms of increased production and productivity of crops on sustainable basis. Research on dry-land agriculture production system render sustainability to productivity and insured efficient use of natural resources. The state ranks first in pulses, second in oilseeds and third in cereal production at the national level. The states contribution to the national food basket is about 10%. Recently, in January 2013, the State received "Krishi Karman Award" at National Levell

Vision

The University has developed Vision-2020 Perspective Plan document in the year 1999 to introspect the future needs and challenges of agriculture, keeping in view the natural resource base, burgeoning human population and climate change. It covers present / past achievements and its impact, SWOT analysis, issues, and future strategies, providing a framework of programmes for meeting the new goals and to provide best service to the society with special reference to the rural livelihood of the farming community in the State of Madhya Pradesh.

Mission

To impart education, research and extension a ctivities effectively for enhancing production, productivity and profitability of agriculture and allied systems in a sustainable manner.

Mandate

- To serve as a centre of teaching in the field of agriculture and allied sciences.
- To conduct basic, strategic, applied and anticipatory research in the field of agriculture and allied sciences.
- To disseminate technology to farmers, extension personnel and organizations engaged in agricultural development through various extension programmes.

Organizational set up

Vice Chancellor is the Chief Executive of the University and supported by the

- Board of Management
- Academic Council
- Administrative Council
- Extension Education Council
- Council for Post Graduate Studies

For Human Resource Management and teaching Director Instruction; research activities, Director Research Services and extension activities Director Extension Services shoulder the responsibilities.

The university encompasses Faculty of Agriculture and Faculty of Agricultural Engineering headed by respective faculty Deans. Constituent Colleges of each faculty are administrated by respective Deans. Head of the Departments are the key person for research and teaching of the respective disciplines.

Registrar and Comptroller support the Vice Chancellor in administration and financial matters.

Present Status

At present, the University is serving 25 districts of the State through four College of Agriculture and one College of Agricultural Engineering (Table 1); one Horticulture Vocational Training Institute; four Zonal Agricultural Research Stations; five Regional Agricultural Research Stations; one Dryland Horticulture Research Station and 20 Krishi

Vigyan Kendras (Farm Science Centre). Faculty of Agriculture has thirteen and Faculty of Agricultural Engineering has six departments (Table 2).

Table 1: Location and establishment year of constituent colleges and centres

Location	Establishment Year
Faculty of Agriculture	
College of Agriculture, Jabalpur	1955
College of Agriculture, Rewa	1955
College of Agriculture, Tikamgarh	2004
College of Agriculture, Ganjbasoda	2007
College of Agriculture, Balaghat	2012
Faculty of Agricultural Engineering	
College of Agricultural Engineering, Jabalpur	1966
Krishi Vigyan Kendra	1983 - 2006
Balaghat, Betul, Chhattarpur, Chhindwara (first), Damoh, Dindori, Harda, Jabalpur, Katni, Mandla, Narsinghpur, Panna, Powarkheda (Hoshangabad), Rewa, Sagar, Seoni, Shahdol, Sidhi, Tikamgarh and Umaria	
Other	
Dryland Horticulture Research & Training Centre, Garhakota	2006
Horticulture Vocational Education Institute Rangua, Garhakota	2008

Table 2: Departments in faculties of the University

Faculty of Agriculture

- Agricultural Biotechnology
- Agricultural Economics & Farm Mgmt.
- Agronomy
- Entomology
- Extension Education
- Food Science & Technology
- Forestry
- Horticulture
- Mathematics & Statistics
- Plant Breeding & Genetics
- Plant Pathology
- Plant Physiology
- Soil Science & Agricultural Chemistry

Faculty of Agricultural Engineering

- Agricultural Structure & Environmental Engineering
- Applied Physics & Agricultural Meteorology
- Farm Machinery & Power Engineering
- Post Harvest Process & Food Engg.
- Soil & Water Engineering
- Instrument Development & Service Centre

Academic

The University admits 448 (Table 3) students in three Bachelor degree programmes through State level entrance test conducted by Professional Examination Board (VYAPAM), Madhya Pradesh, Bhopal. In the University, 15% seats at Bachelor degree programme are reserved for the students from other states as per recommendations of ICAR with due consideration to the State reservation policy. For Indian nationals, 20% payment seats and 5% for Non-Resident Indians and foreign nationals are created over and above the prescribed intake capacity in different faculties.

The University offers Master degree programme in the Faculty of Agriculture and Agricultural Engineering with admission based on merit. In all, 25% seats are filled up by All India Competitive Examination with due attention to the State reservation policy.

The University offers Doctorate degree programme in the Faculty of Agriculture and Faculty of Agricultural Engineering with admission based on merit. Separate terms and conditions are proposed for the

admission of students who qualify UGC/CSIR/ICAR/GATE fellowship for higher degree.

Postgraduate programmes are offered by the University in 14 disciplines in the Faculty of Agriculture, five in the Faculty of Agricultural Engineering and degree on MBA (Table 4). The University offers Doctorate Degree programme in nine departments under the Faculty of Agriculture and three in the Faculty of Agricultural Engineering. The University developed a proposal for regulation to facilitate transfer of credit hours from one university to other university in India. The postgraduate student will be allowed to take courses at one university and to undertake research for completion of degree.

Seminars at Postgraduate level are designed to assist student for building and developing skills in the subject of specialization. The seminars are arranged to promote expression, generate confidence, knowledge management, communication skills, stress management and overall personality development of the student.

Advisory Committee consisting of major and minor advisors to guide students in planning academic requirements and thesis work. The topics selected for curricula research are based on future thrust and current research problem. The students are required to develop synopsis of the research problems, identifying the research gaps. They are also required to defend synopsis seminar in the respective department.

Teacher

For quality education, teachers and faculty are equally important. The teaching job is made more attractive to encourage inflow of good faculty. The promotion policies conducive to quality of teaching and research

Table 3: Seats in differnet degree programmes offered by the University

Faculty	Name of Colleges	Location	Annual Induction (2012-13)		
			UG	PG	Ph.D.
Agriculture					
	College of Agriculture	Jabalpur			
		B.Sc. (Ag.)	84	263	60
		B.Sc. (Forestry)	28	06	--
	College of Agriculture	Rewa	84	63	04
	College of Agriculture	Tikamgarh	84	32	--
	College of Agriculture	Ganj Basoda (Vidisha)	56	--	--
	College of Agriculture (Estd. In 2012-13)	Waraseoni (Balaghat)	28	--	--
Agricultural Engineering		College of Agricultural Engineering, Jabalpur	84	41	27
		TOTAL	**448**	**405**	**91**
Horticulture Diploma Programme			**Annual Induction (2012-13)**		
	Horticulture Vocational Education Institute	Gahrakota Distt - Sagar			
		Seed Production		40	
		Nursery Management		40	

*At UG level, seats include 20% Payment; 5% NRI; 15% ICAR

Smart classroom teaching

Convocation of the University

Library equipped with books & journals

for retention of competent faculty could be met by instituting the rewards for faculty. It would attract and retain best brains in education and research. The teachers are encouraged to participate in foundation courses, refresher courses, workshops and seminars, and international programmes organized periodically.

Course curricula

The University offers Bachelor degree programmes in Agriculture, Agricultural Engineering and Forestry of four year duration through semester system. The unified course curriculum in all the three Bachelor, Master and Doctorate degree programmes is being offered by the agricultural universities across the country. Considering the quality of education, the entire course curricula have been restructured in all the disciplines by the Indian Council of Agricultural Research in the light of business, intellectual property regime, marketing, banking, WTO related issues, computer application, bio-informatics, biodiversity, ecology & environment and agri-business management in job orientation mode along with recent developments. The ongoing courses for Bachelor degree programmes are offered as per recommendations of the Fourth Deans' Committee constituted by the ICAR. The University is among the first few that offered the postgraduate studies as per modified course curriculum recommended by ICAR in 2009-10.

Capstone courses are offered at all the degree programmes. It is a well knit planned learning experience requiring students to support previously taught subjects. At postgraduate level, it provides an opportunity to incorporate previously learned courses into an interconnected frame of reference enabling effective research programme.

Upgradation and modernization of laboratories

A renovated lab

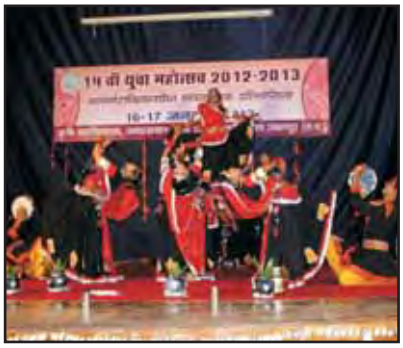


Practical oriented education (RAWE) Forestry Work Experience (FWE)

Rural Agricultural Work Experience (RAWE) and Forestry Work Experience (FWE) are the important competence and confidence building programmes introduced in all the agricultural universities in India. The students of agriculture are learning well on basic and applied issues of science and technology. However, they do not possess adequate self-confidence in starting their own commercial farming. In view of the fact, Randhawa Committee was constituted in 1992 and recommended the Rural Agricultural Work Experience (RAWE) Programme for imparting quality and practical oriented education for productive agriculture degree programme (www.icar.org) to prepare the agricultural graduates for better career in agriculture or agribusiness. Practical hands-on training during higher education is helpful for self-employment.

The programme is run for effective work experience of rural agriculture for student of the final year, for one semester by active participation in the field to review and analyze the work experience critically, understand rural community life, familiarize with the socio-economic conditions of farmers and to draw useful conclusions implemented in actual practical life under field situation. The programme is encouraged by providing financial support from ICAR and State Government.

Staying with farm families in a village provides a real touch of rural atmosphere, so that the students plan their career accordingly. It plays an important role especially for the students with urban background in understanding the real farm-world situation with agricultural practices. This experiential system in agricultural education has a strong potential to prepare a better agricultural technocrats with high level of skill in combination with the modern outlook and management capacity. RAWE is considered as one of the best


Students participation in extra curricular activities Placement Cell - selected candidates

means to produce well trained agricultural graduates having broad based knowledge combating and techniques.

Experiential learning programme has been introduced at Bachelor degree with the specific objective of learning by hands-on participation, by trying, making errors, and gradually narrowing the margin between failure and success. Work-based experiential learning through agricultural-related supervised experiences provide practical, real-world experiences in agriculture, develop a positive work ethic, and meet realistic occupational expectations.

During X Plan, ICAR has sponsored a scheme on experiential learning that involves setting up of instructional farms for production (crop, animal and fish) agronomy, model plants for food processing and value addition for product diversification and engineering workshops for manufacturing, operation and maintenance of farm machinery and equipment. The aim of the scheme is to involve student for learning in the environment of experimental farms, model plants and engineering workshops. It inspires greater confidence, competitiveness and competence among students to meet needs of private sector and to undertake self-employment in vocations of their choice.

Four modules on experiential learning namely plant tissue culture, mass production of bio-agents and bio-pesticides, hi-tech horticulture, fruits & vegetable processing and visual & graphic communication, of one semester duration are offered by the University and the student may choose any one. One time grant from the ICAR for basic infrastructure facility to run the self-sustainable experiential learning module in every agricultural university has been provided. Inter University exchange programme of students for better exposure during experiential learning is considered. At Bachelors degree programme an advisor apart from the class advisor is assigned to every student that provide guidance in academic and personal matters. Advisor monitors and maintains advisee's academic performance in the right direction.

Human Resource Development is one of the important functions as per the mission of the University. Since its establishment, the University has produced 16,500 undergraduate and 6,800 postgraduate students through 43 batches. These pass out students are serving in various Government and private organizations in the field of teaching, research, extension, banking, seed, fertilizer & pesticide sector, farm machinery manufacturing company and NGO's working in the field of agriculture and allied branches. They are rendering the valuable services in the field of agriculture and allied sector in the state, country and abroad.

Teaching methodology

Annual calendar involving fixed date of registration, examination, sports, cultural activities and educational tour is planned with semester break. Student has to register the courses as per required credit hours at the commencement of the semester. The maximum limit of credit hours per semester is fixed in all the three degree programmes. At least 80% of the scheduled classes of each course must be held with minimum 75% attendance to qualify eligibility of examination.

As an applied science with involvement of technology, nearly all the courses are practical oriented. Practical know-how is provided with senior teachers in small batches (15 students/batch) with explanation in instructional farms/ laboratories in how-to-

do-it manner. Classroom teaching involves conventional chalk-duster method with revision through computer assisted presentations and video films.

Master and Doctorate degree programmes in both the faculty involves course as well as thesis research work. Student has to first pass all the subjects offered for the respective degree programme and thereafter complete the thesis problem and initiate writing under the guidance of the advisor towards the partial fulfilment of the degree.

Emphasis on e-learning is given through Information and Communication Technology (ICT) support. Deans and Professors are involved in teaching at Bachelor degree programme for effective interaction with students and administration that serve as a role model for other.

University has developed the following **ten point teaching module** for effective leaning and quality enhancement

- Development of activity milestone of the subject
- Development of departmental profile and establishment of information bank (CD and slide)
- Updation of class notes
- Development and distribution of question bank
- Upgradation of instructional farms
- Experiential learning projects
- Collection and compilation of classical and conceptual research papers/ material
- Upgradation of library facilities with modern gadgets
- Preparation of teaching manuals and
- Upscaling of curricular research/ M.Sc./Ph.D. thesis topics on concurrent issues/thrust areas and anticipatory themes.

e-learning through Smart Classroom teaching

Smart classrooms, in simple terms are interacticve classrooms or e-classroom faclilties have added new dimensions in educational technology particularly in changing environment. From an educational perspective, teaching learning methods and practices are evolving and improving. To fulfil the needs of students, the existing classrooms have been augmented by providing computer generated interactive boards, visualizers and multimedia peripherals with internet facilities. 14 classrooms have been developed as smart classrooms, 9 at headquarter, Jabalpur, 2 each at Rewa and Tikamgarh and 1 at Ganjbasoda. Definitely, this facility has been providing an opportununty to enhance the learning environment for students and also provides support for alternative learning paradigms educators address the digital divide.

Teaching material Teachers of the University are encouraged to write books according to syllabus, practical manual in how-to-do-it-manner, prepare PowerPoint presentation, question bank, videos etc. for effective teaching. Acquaintance and use of e-text books and e-content development are promoted in the University.

Examination - process of evaluation

The University adapt a three tier system of examination at Bachelor degree programme that involves midterm-examination followed by practical-examination and final-theory examination. Midterm examination of 20-mark value is conducted with inclusion of objective type questions without any choice in the middle of each semester with completion of nearly 50% of course. The marks obtained are added in the final theory examination. It helps students to understand, revise the

subject and evaluate their weak and strong areas for improvement. To judge the competence about techniques, practical examination is conducted under the supervision of external and internal examiner.

The final theory examination involves three sections first with objective type questions, followed by the questions with reasoning and then section of descriptive questions. The pattern helps to cover the whole syllabus with minimum choice to avoid selective study by the student. Fifty percent questions are based on the objective and aim of the course, i.e. what a student should know/learn by the course. Other questions are based on the reasoning and case study that has to be solved with the help of the knowledge gained by the subject. Objective type questions help the examiner to cover the whole course and for student to prepare for competitive examination.

After completion of the course work, student has to gain Rural Agricultural Work Experience and pass Experiential Learning Programme successfully to fulfil the requirement of Bachelor degree. In Master degree programme, after completion 75% of the course work in major and minor courses separately, student has to pass the written comprehensive examination conducted by the external examiner from other university. Whereas, in Doctorate degree programme after passing the written comprehensive examination, the scholar has to pass oral comprehensive examination organized by external examiner. After completion of written comprehensive, M.Sc. student can defend the synopsis, present results and write the thesis for evaluation. However, Ph.D. scholar has to undertake written and oral comprehensive and then he can defend the synopsis, discuss the result for approval to write and submit the thesis for evaluation. The thesis is evaluated for approval by one external examiner for Master degree and two for Doctorate degree. The degree is awarded after defense on thesis by the student in an oral examination conducted by the external examiner.

Vocational education The University offers two years diploma course in horticulture on seed production and nursery management at Horticulture Vocational Education Institution, Rangua, Garhakota, Sagar. The University also offers the certificate course in food process engineering and tractor repair and maintenance at College of Agricultural Engineering, Jabalpur.

Infrastructure and library facilities

Conference and lecture hall with adequate seating capacity equipped with audio-visual aids are available for stimulating teaching environment. College at Jabalpur has an auditorium for cultural and other academic activities of sufficient space equipped with audio-visual aids and peripheral facilities.

Internet services are being provided with the computer lab in the reference section for the faculty and research students. VSAT is installed for providing ERNET connectivity. High speed internet connectivity (1.0 Gbps) is being provided under National Knowledge Network (NKN) supported by ICAR. CERA facility and free electronics journals are also made available to the users. Computerized information services using the electronic documents, scanned material and digital resources are available to the users.

Hostel and sports facilities

The University has separate undergraduate and postgraduate hostels for boys and girls. The students live in a pleasant and intellectually stimulating environment. Living in such an environment with people having similar goals and aspiration provides an

exciting experience. International hostel in JNKVV, Jabalpur is under construction with the support of ICAR for facilitating education of foreign students. Establishment of gymnasium, stadium, swimming pool, etc. are under construction with the support of ICAR for all-round development of student and staff to minimize intellectual isolation. Each college has health medical centre supported by medical and paramedical staff.

Students' helpline

The University has well established Students' Welfare Office headed by Dean who

- Organizes free counseling and campus interviews. More than 1,000 students recruited in private and public sectors during last 5 years.
- Organizes special lectures and counseling for students to prepare for competitive examination seeking higher education, fellowship and jobs.
- Arrange counseling for seeking admission in foreign universities.
- Arrange extra-curricular activities including art of living, manage stress, communication skill, leadership, spirituality, health education for memory, games, yoga etc.
- Organizes educational tours for Bachelor degree students.
- Executes inter-collegiate and inter-university sports, games and cultural activities.
- Provides health care services to the students.
- Promotes NCC and NSS activities as credit course at Bachelor degree programme.

Centre of Advanced Faculty Training (CAFT): ICAR, New Delhi, has recognized the Department of Soil Science & Agricultural Chemistry, College of Agriculture, Jabalpur as CAFT erstwhile Centre of Advanced Studies in Soil Science & Agricultural Chemistry in 1995. The centre is engaged in organizing training programmes, in which scientists/ teachers from different States participate and update their knowledge and skill. In all, these training programme besides JNKVV trainers, eminent scientists, resource persons from other universities and subject matter specialists from various fields of specialization are invited to deliver lectures.

Linkages

The University has established strong linkages for higher education, research and training with national and international universities/institutes and private sector organizations. The areas of cooperation include the subject of mutual interest and contribution.

Teaching Research MoU

JNKVV has signed MoU with

- Alcorn State University, USA
- Alabama A&M University, USA
- International Crop Research Institute for Semi-Arid Tropics, Hyderabad
- International Centre for Agricultural Research in Dry Areas, Aleppo, Syria
- Japan International Cooperation Agency, Japan
- Indian Agricultural Research Institute, New Delhi
- National Bureau of Agriculturally important microorganisms, Mau Nath Bhanjan, U.P.
- Jain Irrigation System Ltd., Jalgaon (M.S.)
- Mahindra & Mahindra Ltd., Mumbai (M.S.)

Research

State economy is mainly depends on agriculture and allied activities. Therefore, the development of agriculture sector is a key for overall development of the State of Madhya Pradesh and for steady and sustainable development there is a need to strengthen research in frontier area and develop market driven human resources. The Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur marching ahead with this daunting task since its inception in 1964. After formation of RVSKVV, Gwalior in 2008, and MPPCVV, Jabalpur in 2009, JNKVV encompasses four Agriculture colleges (Jabalpur, Rewa, Tikamgarh & Ganjbasoda), one Agricultural Engineering College (Jabalpur), one Horticultural Vocational Educational Institute, Garhakota (Sagar), four Zonal Agricultural Research Stations, four Regional Agriculture Research Stations & four Agriculture Research Stations. Their locations are as follows:

Zonal Agricultural Research Stations

1. Head quarter - Directorate of Research Services, JNKVV, Jabalpur
2. Powarkheda, Hoshangabad
3. Kundeshwar Farm, Tikamgarh
4. Chandangaon, Chhindwara

Regional Agricultural Research Stations

1. Kuthulia Farm, Rewa
2. Bamhori Farm, Sagar
3. Murjhar Farm, Waraseoni, Distt. Balaghat
4. Tribal Agricultural Research Station, Dindori

Agricultural Research Stations

1. JNKVV Betel vine Research Station, Navgaon, Chhataupur (MP)
2. Dryland Horticultural Research Station, Ranguan, Garhakota, Tehsil - Rehli, Distt. Sagar (MP)
3. ARS, Tendani, Distt. Chhindwara (MP)
4. ARS, Sausar, Distt. Chhindwara (MP)

Mission

To conduct education, research and extension for enhancing productivity, profitability and sustainability of agricultural production systems and quality of rural livelihood in the state of Madhya Pradesh.

Mandate

- To serve as a Centre of teaching and research in the field of agriculture and allied sciences.
- To disseminate technology to farmers, extension personnel and organizations engaged in agricultural development through various extension programmes.

Salient Achievements :

Contributes to food security through development of crop varieties. Since inception, total 338 varieties of different crops have been developed. 78 Varieties of different 28 crops developed during last 10 years (13 of wheat, 10 of chickpea, 5 of kodo, 5 of sesame, 4 each of rice and linseed, 3 each of cotton, niger, soybean and mustard, 2 each of barley, bajra, kutki, safflower, berseem, oat and maize and 1 each of fenugreek, tomato, gobisarson, urad, sorghum, moong, pieonpea, sugarcane, groundnut fodder rice bean and millet).

- Developed the world famous Jawahar series of soybean varieties with better oil

Rice JRH 12

Soybean JS 335

Wheat MP 1106

(18-20%) and protein (40-42%) content with resistance to major diseases, which laid strong foundation for expansion of its area and production in the country which has recognized the Madhya Pradesh as 'Soy State' and contributed greatly to the economy of the State.

- Soybean varieties JS 95-60 and JS 97-52, which are gradually replacing the old famous soybean variety JS 335 that covers more than 80 percent of acreage of soybean in the country.
- Contributed to food security through development of varieties of rice (21), wheat (14), maize (7), sorghum (8), chickpea (17), pigeonpea (5), mungbean (3), urdbean (5), lentil (3) and barley (1).
- Contributed to the success of yellow revolution (oil seed production) through development of high yielding and oil rich varieties of mustard (3), sesame (5), safflower (5), niger (3), groundnut (3) and soybean (10).
- Development of early hybrid rice varieties JRH 4, JRH 5 and JRH 8 has increased the yield of upland rice.
- *Brassica napus* variety Jawahar Teri Uttam has low erusic acid and glucosinolate, suitable for export and production of edible oils.
- Developed small millet varieties of kodo (12), ragi (3) and kutki (3) for food security in tribal area.
- Developed improved varieties of vegetables such as chilli (2), table and field pea (5), sweet potato (2), brinjal (2), tomato (1) and Indian bean (4).
- Developed high yielding varieties of medicinal and aromatic plants such as opium poppy (2), ashwagandha (2), isabgol (1) and safed musli (1).
- Significant contribution towards development of crop varieties resistant to diseases such as YMV of soybean (JS 97-52), white rust (Jawahar Mustard 1),

Oat JO 2000-61 (JO 2)

Sesame JTS 8

JAKI 9218

Broad Based Furrow Method

Gerbera under protected cultivation

Cherry Tomato under protected cultivation

downy mildew (Jawahar Bajra Hy 1), wilt (Jawahar Gram 218), powdery mildew (Jawahar moong 721), wilt and sterility mosaic (Pigeonpea JKM 7), Phytophthora blight (Jawahar Til 22), powdery mildew and wilt (Jawahar Pea 885), fruit rot (Jawahar Mirch 218) and scurf (Jawahar Sweet Potato 145).

- Developed economically viable technology for the management of salt affected soils with nutrient package and tree crop sequences.
- Developed management practices for black soils of high rainfall areas such as (a) Ridge and furrow system for planting of upland Khairf crops, (b) Raised and sunken bed technology and (c) Rainwater recycling technology for efficient use of land and water resources.
- Sustainable cropping system for different agro climatic zones for irrigated and rainfed situations has been identified.
- Developed soil test based fertilizer adjustment equations for 16 major crops of the State to achieve desired yield targets.
- Promoting the Hi-tech horticulture technology with successful production of coloured capsicum, tomato, gerbera and roses.
- Developed Jawahar Light Trap for monitoring of insect-pest occurrence and Integrated Pest Management package for the management of major insect-pests.
- Package for cultivation of betelvine with efficient and economical management of Phytophthora blight diseases has been developed and popularized.
- JG 11 brought the chickpea revolution in southern state particularly Andhra Pradesh. JG 74, JG 130, JAKI 9218, JG 16, JG 63 have made diversification in different part of the state. As per report of ICRISAT JG 14 -identified as heat tolerant cultivar.

Kodo millet DPS 9-1

Jawahar Linseed-67 (JLS-67)

Jawahar Guggul Blazer

- Introduction of Kabuli chickpea varieties led to expansion of 15% area.
- M.P. Wheat is known for its quality. Numerous quality wheat varieties that had been developed in past and continue in present are: JW 3020, JW 3211 and JW 1203 (new).
- Identification of potential cropping systems for different agro climatic zones for irrigated and un irrigated situations (Kymore plateau and Satpura Hill zone – Rice hybrid– Garlic – Maize + Cowpea 4:2 inter cropping. Malwa Plateau – Intercropping of soybean+ maize (4:2) – Potato. Central Narmada Valley – Soybean-Vegetable Pea – Sugarcane).
- Evolved production technology for 30 medicinal and 6 aromatic plants. Quality analysis lab supports the value addition in this sector. Recently, under HRD programme of ICAR the R&D activities of M&A plants under JNKVV have been identified as NICHE area to develop the Centre of Excellence & "Facilitation Center". This helps in promotion of farming of medicinal and aromatic crops for income and employment generation.
- Promoted ridge and furrow system of soybean planting which enhanced the productivity of soybean under excessive rainfall condition as well as under water stress condition.
- Promotion of System of Rice Intensification which enhanced the profitability from rice due to enhance productivity and optimization of resource use.
- For promotion of integrated farming systems, the VV has developed production technology for lac production, beekeeping, mushroom production, inland fisheries, poultry, vegetable production, small processing units etc.
- Developed technologies for soil conservation, ground water recharge, low water lifts, water & energy saving in irrigation.
- For improvement of water productivity the Water Resources Restructuring project is in operation in five river basins covering 25 districts of Madhya Pradesh. The outcome of the project will definitely help in improving the water use efficiency especially under rainfed farming areas of the state.
- Developed soils test based fertilizer adjustment equations for 16 major crops of the State for achieving desired yield targets.
- Developed packages for economic and efficient use of fertilizers, manure and bio-fertilizers.
- With regards to genetic biodiversity of soybean Rhizobia in the State of Madhya Pradesh, the genetic changes have been identified in the existing isolates as compared to originally inoculated USDA strains due to time, environment and other ecological conditions.
- Developed technology for High tech horticulture and successfully produced coloured capsicum, Jerbera, bud roses and cherry tomatoes.
- Developed Jawahar Light trap for monitoring of Insect-pest occurrence.
- Integrated Pest Management package for the management of major insect pest diseases has been developed.
- Package for cultivation of betel vine with efficient and economical management of phytophthora blight diseases has been developed and popularized.
- Developed microbial pigment using agro byproducts as subtract.
- Developed low cost technology for cultivation of oyster mushroom.
- Developed low-cost technology for cultivation of oyster and button

mushroom.

- Developed low-cost machinery, viz. thresher for sunflower, safflower handling devices, water chestnut decorticator, pea peeling machine, chickpea stripping cum shelling machine, tillage equipment, energy saving dryers and onion storage structure.
- Developed electronic instruments such as multi-channel electronic choke indicator for tractor driven seed drills, digital grain moisture meter, micro controller based rice polish measurement system, soil nutrient estimation system and computer based monitoring system for safe grain storage.
- Developed e-Agrotech: multimedia software for implementation of available agricultural technology for various crops.
- Developed e-IPM: multimedia bilingual (English/Hindi) software developed for management of insect-pest, disease, nematode, weeds, and nutrient disorder of major oilseeds and pulse crops of Central India.
- Lac cultivation, a low external input natural resource based livelihood enterprise is being popularized among tribal communities.
- Beekeeping, an additional income generation enterprises is popularized among farmers and rural youths of the State.

Excellence at National level

- Centre of Advance Studies in Soil Science (Jabalpur).
- Centre of Excellence in Medicinal and Aromatic Plants (Jabalpur)
- Biotechnology Centre (Jabalpur)
- Dry Land Horticulture Research & Training Institute (Garhakota-Sagar)
- Nucleus and Breeder Seed Production Centre. Contributes of about 30 per cent of the Breeder seed of various crops at national level.
- Business Planning & Development Unit (Jabalpur).

Future Research Need

I. Biodiversity and Bio-technology

- Research programmes related to use of biotechnology at community level.
- Genetic finger printing of curial species chemical analysis of active ingredients.
- Value added technologies to promote medicinal and aromatic plants.
- Promotion of bio-monitor and bio-indicators for environmental safety.
- Development of programmes for community level biotechnology in the field of agriculture, horticulture, medicinal and aromatic plants, forestry and livestock sector.
- Development of tissue culture technologies for horticulture crops.
- Molecular characterization and mapping of QTLs for biotic and abiotic stress, grain quality, improvement of agronomically important characters, salinity, flood resistance in cereal oilseed and pulses.
- Isolation, characterization and cloning of biotic and abiotic stress resistance, salinity and grain quality in cereals legume and oil seed crops.
- Improvement of quality of medicinal plants through metabolic engineering/ tissue culture.

- Improvement of important fruit crops for nutritional quality, biotic and abiotic stress resistant through molecular/ tissue culture techniques.

II. Genetic Improvement in Field Crops

- Popularization of hybrid technologies of rice, sorghum, maize, pearl millet and emerging crops like pigeon pea, sesame etc.
- Development and popularization of seed quality enhancement technologies.
- Varietal improvement for adaptation to climatic change.

III. Production & Crop Management Technologies

- Organic farming
- Precision farming
- Conservation agriculture
- Use of microbes for enhancing efficiency
- Need base Farm Mechanization

IV. Food Science and Technology

- Processing and value addition of forest foods grown in Madhya Pradesh (tamarind, kaitha, bel, ber, mahua, char, tendu, aonla, sitaphal etc.).
- Formulation and development of health foods, weaning foods, convenience foods, therapeutic foods, nutraceutical foods using medicinal and herbal plants (eg. Use of Aloe vera, Stevia (sweet but sugar free).
- Shelf life enhancement of various fruits and vegetables through irradiation and dehydration technology.
- Development of value products for commercialization

V. Post Harvest Technology

- Developed Technology for extruded products from remaining pulses like lentil, blackgram with remaining cereals like sanva, kutki, and bajra etc.
- Popularization of extruded products as snack food through training and demonstrations.
- Popularization of soybean and milk analogues from soybean in villages and household level.
- Popularization of soy products for its adaptability in daily diet, which will help in solving malnutrition.

VI. Soil and Water Management

- Development of Geographical Information System (GIS) for Agricultural Resources of Madhya Pradesh.
- Ground water recharge through Haveli system of cultivation
- Improving productivity of horticulture crops through adoption of micro-irrigation irrigation system and water conservation technology.
- Developing appropriate models for efficient utilization of rain water in Kharif season and temperature management in Rabi season.

VII Potential and Opportunities for Employment Generation in M.P.

- Development of transport system for safe transport of fruits and vegetables at low temperature from villages to

potential markets.

- Development of indigenous technologies for value addition of agricultural produce.
- Development of participatory hybrid seed production programme.
- High-tech horticulture in peri-urban areas of the State
- Agri-entrepreneurship development
- Agri-advisory services, Agri-call centre and Agri-health centre.

Seed production JNKVV produces 24% Breeder seed of the national indent. The important features of the seed production programme are:

- Maintenance breeding based production.
- Effective internal monitoring system and in-house strong quality assurance mechanisms.
- Diversification of nucleus/ breeder seed production programme to meet the demand of quality seeds of field crops, vegetables, spices, sugarcane, medicinal & aromatic plants.
- Conducting need based training programmes for seed professionals.
- Basic and applied research on seed technology.

Instructional farm

- The instructional farm is helping to develop confidence among the students about practical fieldwork and providing facilities for practicing their knowledge.
- It is facilitating in conducting on-farm practicals in all the subjects of agriculture and horticulture, post harvest and value addition.
- It is improving the quality of agricultural education in terms of generating trained human resource.
- It helps in managing farm production, marketing of produce and products, which develops confidence, especially in strategic programme areas, i.e. hi-tech horticulture, seed production, post harvest processing and value addition, organic farming and rain water harvesting.

Crop cafeteria and Technological park The students / scientists / teachers are involved in the development of crop cafeteria and technology park to display the significant achievements and technology generated in various disciplines of the University.

Business Planning and Development Unit

- The University has established BPD Unit as a joint venture of NAIP-ICAR for transferring commercial technology for promotion with entrepreneurs for the benefit of farmers.
- It is playing a vital role in the development of entrepreneurship and linkages with small and marginal farmers to foster product delivery by shortening the length of supply chain.
- The BPD flags transferable technology through incubator, protection through IPR, licensing, commercialization, market linkages, quality assurance system and human resource development.
- The University has signed MoU with many private organizations in order to promote hybrids, medicinal plants and microbes.

Extension

Directorate of Extension Services was started since the inception of Vishwa Vidyalaya in 1964 and has a key role in dissemination and transfer of latest technology in the field of crop

production, crop improvement, cropping system, nutrient management, plant protection, horticultural crops management, agro-forestry, wasteland management, watershed management, medicinal and aromatic plants, cattle and poultry management, agricultural machinery, post harvest technology, value addition and resource management, emanating form various research programmes to the farming community and extension personnel to minimize the technological gaps, existing among the farming community through extension activities for enhancing productivity, profitability and sustainability of agricultural production systems and quality of rural livelihood.

Directorate of Extension is committed to serve farmers through well - organized network covering all agro climatic zones of the State. The channels for the transfer of agricultural and allied technologies are the direct approach to the farmers and indirectly by training of the master trainers of the extension agencies who own the responsibilities of transferring them to the ultimate users. The Technologies are being transferred to the farmers through demonstrations, training programmes, field days, Kisan Melas, print and electronic media, maintaining a close linkage with State Department of Agriculture and other agencies for technological backstopping, covering almost all the districts of the State. The motto of the university is reach the unreached through extension system in Madhya Pradesh. The main objectives of the Directorate are given below:

- Transfer of technologies, assessment, application, refinement and feedback for the researcher.
- Up gradation of knowledge and skill of extension functionaries as well as farming community.
- Development and dissemination of technologies through print and electronic media for mass communication.
- Catering needs of farming communities through single window system.
- Linkage with line departments.
- Reviewing the activities of KVKs and technological backstopping of KVK Scientist and help in formulating action plan.
- Krishi Vigyan Kendra (KVK)

Mandate

- Technology assessment, refinement and demonstration of technology/products

Activities

- Conducting "On Farm Testing" for identifying technology in terms of location specific sustainable land use systems.
- Organize training programmes to up date the extension personnel with emerging advances in the agricultural research on regular basis.
- Organize short and long - term vocational training courses in agriculture and allied vocations for the farmers and rural youths with emphasis on "learning by doing" for higher production on farm and generating self-employment.
- Organize Front Line Demonstration on various crops to generate production data and feedback information.
- Work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.
- Create awareness about frontier technologies through large number of extension activities like farmer fair, field days, strategic campaign, ex-trainees meet etc.

- Seed and planting materials products by the KVKs also be made available to the farmers.

Location of KVKs

50 Districts in the State of Madhya Pradesh, 25 districts are under the JNKVV have 23 KVKs are established and 20 KVKs i.e. KVK Chhindwara (1982), Balaghat (1992), Seoni (1994), Shahdol (1994), Sidhi (1994), Tikamgarh (1994), Betul (2002), Panna (2002), Dindori (2003), Damoh (2004), Harda (2004), Hoshangabad (2004), Jabalpur (2004), Narsinghpur (2004) Rewa (2004), Sagar (2004), Chhattarpur (2005), Katni (2005), Mandla (2006), Umaria (2006) under the jurisdiction of JNKVV.

Method of assessing the need

All the extension based programmes are being designed based on need assessment of the farmers, field extension personnel and rural youths. The need of different members of the community are being assessed through Participatory Rural Appraisal (PRA) and based on the problems and availability of resources in the locality, Different programmes and activities are being designed and implemented based on need assessment. Training needs of the extension personnel are also assessed before start of training programmes and accordingly training curriculum are being designed.

Funding sources

- The Indian Council of Agricultural Research funded for KVKs programmes and activities.
- Beside this, the University also provides the funds for implementing different programmes especially for production of quality seeds at Instructional Farm.
- The funds are also made available by the Central Government for producing quality seeds of different major crops on the farmers' fields through participatory mode.
- The State government also provides the funds for multiplication of quality planting materials of horticultural crops under National Horticultural Mission.
- The Directorate of Extension Services and Communication Centre are being funded by the State government under State plan.
- The ATIC centre is being operated on revolving fund basis
- The extension activities organized at Zonal Research Stations, Regional Research Stations and College Campaii are being funded by the ICAR and State Government.

Human resource development

A comprehensive training scheduled was prepared on various aspects of transferable technology with the aim to upgrade the knowledge and skill of extension functionaries of the state departments of agriculture, veterinary, horticulture, agricultural engineering and allied developmental agencies. These trainings were organized in different campaii and emphasizing on natural resources management, diversification and intensification of cropping, organic farming, rainfed horticulture, integrated pest/disease and weed management. Training units were physically and financially strengthened for further improving the quality of trainings. Besides, regular training programmes at different units of the university, special trainings sponsored by Department of Farmers Welfare & Agriculture Development covering various aspects of production technology of crops viz. soybean, rice, rabi


Frontline demonstration and on-farm testing

KVK training in action

pulses, coarse cereals, biofertilizers and integrated pest management were organized for extension officers.

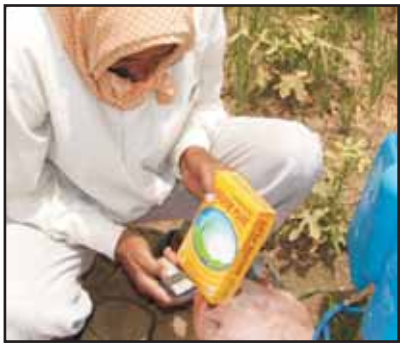
Monitoring system

Efforts were made to improve the monitoring system for which different programme were launched for timely submission of information. The e-linkage facility has been created in eight KVKs. The need based infrastructural facilities were provided in all the KVKs for smooth functioning of KVKs. The reporting system of information was strengthened for timely submission of information to concerned organizations. Pre zonal and Zonal workshops of KVKs were organized successfully and review the progress of different KVKS. The scientific advisory meetings of all the KVKs were organized and action plan were developed for implementation in the operational areas.

Krishi Vigyan Kendra are assessing the technological needs of the district and revalidating the technology for adoption. Systematic work through field demonstrations, on and off campus training to extension workers and vocational trainings for farm youths and farm women have been regular activities of the KVKs, thus minimizing the technological gap between production achieved of various crops by the farming community and production potential of the technologies. Field days and Kisan Melas were also organized in all the seasons.

Training programmes

The Human Resource Development (HRD) could play a key role in the progress of agriculture. The University has given high priority to its HRD programmes. It has an extensive programme of imparting skill-oriented trainings to the farmers and extension officials. To update the knowledge and skill of extension functionaries, KVKs



Kisan Mobile Sandesh


Dignitaries visited JNKVV stall during Exhibition

arranged courses to benefit extension officials. These courses were formulated looking to the needs of field extension functionaries. In training programmes, emphasis was given for skill Improvement on various aspects of crop management like plant protection, identification of symptoms of diseases, pest damage, nutrient deficiency and their management practices. Field extension personnel were offered the latest production technology of field crops, vegetables, fruit crops, medicinal and aromatic plants. As livestock is an integral part of the farming system, the field staff was also trained on various aspects of livestock management.

One of the mandates of KVKs is to organize trainings for farmers and farm women. These need based training programmes facilitated them to update the knowledge and skills for improved farming.

Efforts were also made to organize vocational training courses for rural youths, school dropouts etc. with the aim to generate employment opportunity for them. These courses covered cattle management, poultry, lac cultivation, maintenance and repair of farm equipments, mushroom cultivation, preparation of vermicompost, nursery management, vegetative propagation of fruits and ornamental crops to be self dependent.

Under empowerment of farm women programmes, trainings to farm women in different fields such as kitchen gardening, tailoring, preservation, health and hygiene were imparted. The other activities included training of screen painting, tie and dye printing and safe storage of grains to rural youths including farm women, service training programmes and sponsored trainings were conducted to farmers and field extension personnel.

Frontline demonstrations

The University conducts large number of field demonstrations to make the farmers aware of the new technologies generated by the scientists. Front Line Demonstrations ere regularly conducted in Kharif and Rabi seasons on need based components of production technologies.

A comprehensive FLD programme on oilseed (soybean, niger, sesame, groundnut, linseed mustard) and pulses (arhar, moong, urid, lentil, pea and gram) was taken up on farmers field through KVKs for transferring the improved location specific technologies. Nearly one third of the beneficiaries under these programmes belong to weaker section of the farming communities. Major emphasis was given on introduction of improved varieties, IPM, INM and IPDM. Superiority of improved technology over farmers' practices was demonstrated successfully.

On farm testing

OFTs on different aspects of crop production and protection were conducted by KVKs. These were conducted in participatory mode farmers' fields. The process gave opportunities to the scientists to work and interact with farming community and collect useful feedback for production purposes. The approach helped the farmers to get convinced with the technological options assessed on farmers' fields. The suitable technologies identified by the scientists were taken in the FLDs programmes for their wider acceptability and horizontal expansion.

Kisan mela and kisan sangosthi

Kisan Mela, Kisan Sangosthi and Crop Days are the regular features of the extension activities of the university. They were organized at different colleges, research stations and KVKs to equip the farmers, farm women and rural youths with the latest development of agricultural research and

technologies, review their reactions and to assess their problems. Thirty three kisan melas and field days from block level to state level were organized. The special feature of these kisan melas was farmers' scientists interface through Kisan Sangosthi, which had the direct impact on farming community for promoting horticultural crops in the state.

News letter

All the Krishi Vigyan Kendras publish KVK News letter on quarterly basis. These news letters cover the events scheduled for next three months and achievements made by them in the previous quarter. The need based technologies are being made available through these news letters for further dissemination to farmers and field extension workers. These news letters are being sent to larger numbers of panchayats, farmers, field extension personnel and district authorities.

Kisan mobile advisory

This programme was launched by the university in 2008-09 through which need based technologies in form of messages were sent to farmers on mobile once a week. The date for sending the messages is fixed. This programme has gain the popularity within a year and farmers receive the advice of scientists in the form of SMS messages on various aspects without any charge and without losing the time.

System of rice intensification

The new technology for improving the rice productivity in the State was identified and adopted by all the KVKs. SRI is the technology with lesser input (seed, water) with higher return. KVK Shahdol, Katni, Seoni, Rewa, Jabalpur, Umaria, Balaghat, Dindori and Mandla started this programme on large scale. The numbers of interventions were implemented by these KVKs to disseminate the technology to larger farming communities.

NICRA

National Initiative on Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in 2011. The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components viz. Strategic Research, Technology Demonstration, Capacity Building and Sponsored/ Competitive Grants

Tribal Sub Plan – Pulses

Three KVKs viz. Dindori, Mandla and Shahdol have implemented Tribal Sub Plan – Pulses scheme "Enhancing Pulses Production for Food, Nutritional Security and Rural livelihoods of Tribal Community through Demonstration and Training" in tribal dominating area as desired by council.

Seed village programme

This innovative programme was implemented through all 20 KVKs in both seasons. Quality seeds were made available to farmers. This helped in improving the seed replacement rate in the state.

Seed production programmes

Each KVK has implemented the seed production programme both in Kharif and Rabi season and produce the quality seeds on the instructional farm. Seeds were

produced by the KVK which were made available to the farmers and government farms for further multiplication.

Quality planting materials

Infrastructural facilities were developed in six KVK viz. Betul, Jabalpur, Damoh, Sagar, Katni and Chhindwara to produce quality planting material of horticultural crops. These KVKs have developed the scion block of different horticultural crops and started producing the quality planting materials.

Crop variety cafeteria

This new programme was implemented by all the KVKs and seeds of new crops varieties/ hybrids of Kharif and Rabi crops were made available to them with the object to assess and demonstrate the suitability of new crops cultivars. Farmers visited the demonstrated plots. This programme also facilitated the scientists to develop seed bank of different varieties. The most appropriate varieties were identified for conducting OFTs and FLDs on farmers' fields.

Salient achievements

- KVKs conducted 6635 On Farm Trials on the given thematic areas and different technologies were assessed by conducting 306 OFTs.
- KVKs carried out 5736 FLDs on 840 ha area (Oilseed, Pulses and others crops)
- Total 1684 training courses were conducted and 46734 participants (farmers, farm women, rural youth and extension personnel) were trained.
- For popularizing the technologies in the state total 6280 extension activities in the farm of field days, farmers fair, farmers visit, exhibition, film show, etc. were organized which benefited 93586 farmers and extension personnel's.
- Planting material, quality seed, live stock products and other bio products were produced by the KVKs.
- 40 Scientific Committee meeting were conducted and 80 news letters were published.
- Soil and water samples were tested.
- The 7th National Conference on Krishi Vigyan Kendras–2012 at Punjab Agricultural University, Ludhiana from 20-22 November, 2012. The conference was inaugurated by Sh. Sharad Pawar, Hon'ble Union Minister of Agriculture and Food Processing Industries, Govt. of India, New Delhi. More than 1200 delegates from 630 KVKs across the country are participating in the conference based on the theme for 'Integrating Technologies and Best Practices'. The National Conference is being jointly organized by the ICAR and PAU. The objective of the conference is to bring KVKs on a platform so that they could be benefited from experience of each other and interact with eminent agriculture scientists. An exhibition was organized with the focus on Secondary Agriculture with some farm innovators and other stakeholders. Hon'ble Minister of Agriculture, Govt. of India visited the exhibition stall of the KVKs and appreciated to work actively in their respective areas. Different achievements of the University were highlighted in the exhibition.
- Considering the importance of training as its main mandate, so far, 15,766 training programmes were organized benefitting 3,28,721 farmers including women in last 10 years. Special training programmes were organized for empowerment of farm women in different fields such as kitchen gardening, safe storage of seed and grains, preservation, health and hygiene, tailoring, screen painting and tie & dye painting.

- With the aim to generate employment to rural youths and school dropouts, 2,373 vocational training programmes were organized benefitting 53,931 participants on cattle management, poultry, lac cultivation, maintenance and repair of farm equipments, mushroom cultivation, preparation of vermicompost, nursery management, vegetative propagation of fruits and ornamentals.
- Front Line Demonstrations are regularly conducted in Kharif and Rabi season on need based components of production technologies with greater emphasis on introduction of improved varieties, IPM, INM and IPDM. FLDs on oilseeds and pulses covering 3,580 ha that benefitted 8,450 farm families during last ten years.
- On-farm testing was conducted on participatory mode to assess the performance of 1,536 new technologies on 80,397 farmers' fields for their wider acceptability and horizontal expansion in the State.
- More than 350 Kisan Mela and field days were organized by the University in which a large number of farmers and extension personnel participated. Exhibition and interface meetings were organized for dissemination of technology.
- A new programme Kisan mobile was launched in 2008-09 to provide need based technology in the form of messages to the farmers registered with KVKs. In each year, 9.60 lakh messages were sent by KVK to the farmers.
- The University has developed a large number of varieties and production technology. In order to transfer these varieties and technology to farmers' fields, a comprehensive programme of crop cafeteria and technology park have been innovated by the University, where farmers are invited to visit. This is proved to be the best mechanism for transfer of new varieties and technology to the farmers' field.
- Radio talks recorded at the University studio are broadcasted state wide by All India Radio, Jabalpur in a special programme Krishi Vishwa Vidyalaya Se Kheton Tak, since last 25 years.

Awards

- **Rafi Ahmed Kidwai Award 2007** was conferred on Dr. S.K. Rao, Professor and Head, Plant Breeding and Genetics for valuable contribution in the field of genetics and plant breeding by ICAR, New Delhi.
- **Kailash Nath Katju Award 2008:** Dr. S.K. Rao, Dean, College of Agriculture, Rewa was awarded for valuable contributions in the field of crop improvement and seed production by the Department of Science & Technology, Government of Madhya Pradesh, Bhopal.
- **Bharat Ratna Dr. C. Subramaniam Award** for Outstanding Teacher in Agriculture and Allied Sciences Biennium 2007-2008 was conferred on Dr. Dhirendra Khare, Professor, Department of Plant Breeding and Genetics by the Indian Council of Agricultural Research, New Delhi for excellent teaching in the field of Crop Science.
- **Outstanding Team Research Award 2007-**2008: The team comprising of Dr. A.N. Shrivastava, Professor; Dr. S.K. Rao, Dean; Dr. (Smt.) S. Rao, Professor; Dr. R.K. Varma, Professor; Dr. M.S. Bhale, Assoc. Professor; Dr. D. Khare, Professor; Dr. M.K. Shrivastava, Tech. Asstt.; and Dr. B.D. Ghode, Assoc. Professor was awarded for outstanding research on Soybean by ICAR, New Delhi.

Kisan Sangosthi

Extension personnel training

ICAR Award

With the efforts of the University, agricultural growth rate of the State reached upto 18.9%.

- **Millennium ICRISAT Science Award-2008** was conferred on Dr. (Smt.) Om Gupta, Professor; Dr. (Mrs.) Anita Babbar, Professor and Dr. A.K. Bhowmick, Professor as Outstanding Partnership - Partner Institution in recognition of their contribution in Chickpea research towards adoption of improved Chickpea cultivars in Southern India, Myanmar and Ethiopia.
- **Best KVK Award of ICAR 2000-01**: KVK, Chhindwara was awarded for excellent performance at National level.
- **Best Zonal KVK Award of ICAR 2009-10**: KVK, Jabalpur was awarded for excellent performance at Zonal level (Zone VII) .

Publications

University publishes Research Highlights, Newsletter, JNKVV at a Glance, Annual Report, JNKVV Research Journal, Year Planner, University and College Profiles, Krishi Vishwa, Jawahar Krishi Sandesh, Course Curricula, Text Books, Thesis Preparation Manual, Question Bank, Practical Manuals, Training Manuals, Periodicals, Technical Bulletins, Leaflets, Folders, Diary and Calendar. Every KVK published need based technical bulletins (bulletins, manuals, books and folders) covering the technologies suitable for agro climatic zones.

ICAR Best KVK Zonal Award 'Zone VII

ICAR Award

Rafi Ahmed Kidwai Award