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AAU
कृणवन्तो राष्ट्रं कृषिसंपन्नम्

Anand Agricultural University

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AAU *at a glance*

Faculties

- Agriculture
- Horticulture
- Veterinary
- Dairy Science
- Food Processing
- Agri Engineering
- Agri-Business Mgt
- Agril IT

Polytechnics

- Agriculture
- Agril. Engineering
- Horticulture
- Home Science

Anand Agricultural University
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INTRODUCTION

EDUCATION

RESEARCH

AGRICULTURAL EXTENSION EDUCATION

THRUST AREAS & INITIATIVES

VISION

Agriculturally Prosperous Gujarat and India

MISSION

- Search for new frontiers of Agricultural Sciences
- Development of excellent human resources and innovative technologies
- Service to farming community

HISTORY

Way back, in the forties, Institute of Agriculture was established by the Iron Man of India, Sardar Vallabhbhai Patel not as merely an educational institution, but as a mission, a cause, primarily conceived to revitalize agriculture, following Gandhiji's call for village regeneration. In 1972, the Institute was taken over by Govt. of Gujarat which became one of its campus when Gujarat Agriculture University was established.

The Anand Agricultural University (AAU), carved out of the erstwhile Gujarat Agricultural University, came into existence at Anand by the Government of Gujarat on 4th March, 2004. Through AAU, the farming community is being provided support in all the three facets, namely education, research and extension education activities in agriculture and all its allied fields.

Organizational Chart & Decision channels

Board of Management
[Supreme Decision Making and Executive Authority]

Vice Chancellor

Research Council

Res. Sub-committees
- Crop Improvement
- Crop Production
- Plant Protection
- Dairy Sci., Agri. Engg. & Food Processing
- Animal Production
- Animal Health
- Social Science

Academic Council
(Autonomous authority responsible for academic matters and maintenance of academic standards)

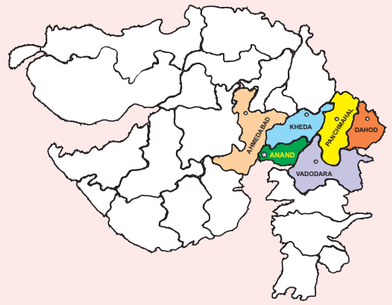
Extension Education Council

Faculty of Agriculture	Faculty of Veterinary Science	Faculty of Dairy Science	Faculty of Food Processing Tech. & Bio-Energy	Faculty of Agri Engineering
Board of Studies	**Board of Studies**	**Board of Studies**	**Board of Studies**	**Board of Studies**
✦ Crop Production	✦ Vety. Basic Subjects	✦ Basic Subjects of Dairy Sci.	✦ Post Harvest Eng. & Tech.	✦ Soil & Water Engg.
✦ Plant Science	✦ Preclinical Subjects	✦ Food Science subjects of Dairy Science	✦ Food Engineering	✦ Farm Machinery & Power Engg.
✦ Plant Protection	✦ Clinical Subjects	✦ Subjects of Dairy Tech.	✦ Bio-Energy	✦ Agril. Process Engg.
✦ Basic & Social Sci.	✦ Animal Production Subjects			✦ Renewable Energy

Faculty of Agri Information Technology | Faculty of Agri - Business Management | Faculty of P.G. Studies | Library Council | Building Construction Committee

LOCATION

AAU is located in Central Gujarat, in the Milk City Anand, five kilometers away from the Railway Station, 72° 50' longitude and 22° 35' latitude to the South, consisting of an area of approximately 301 ha. The jurisdiction of AAU includes six districts, i.e., Ahmedabad, Anand, Kheda, Vadodara, Panchmahal and Dahod, in the Middle Gujarat climatic zone with a network of seven colleges, twenty four research centers, and six extension education institutes.

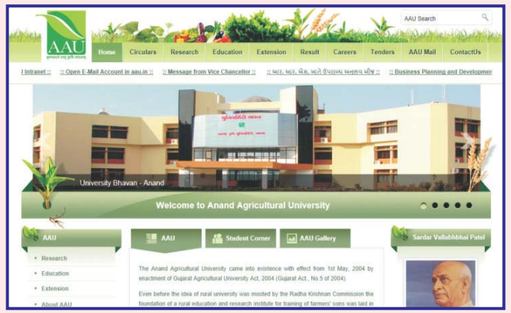


AAU's activities have expanded to span newer commodity sectors such as soil health card, bio-diesel, medicinal plants apart from the mandatory ones like rice, maize, tobacco, vegetable crops, fruit crops, forage crops, animal breeding, nutrition, dairy products, etc. The core of AAU's operating philosophy, however, continues to create the partnership between the rural people and committed academia as the basis for sustainable rural development. In pursuing its various programmes, AAU's overall mission is to promote continuous process of development of sustainable growth and economic independence in rural society. AAU aims to do this through education, research and extension education. Thus, AAU works towards the empowerment of the farmers.

CONVOCATIONS

Since inception, AAU organizes convocation every year.

Happenings @ Information Technology Center



Krushi Mahotsav 2012 live webcasted Online on www.aau.in

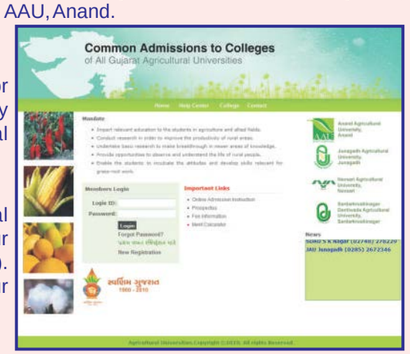
Krushi Mahotsav, which is being held for the last eight years with a determination to reach out to the farmers, to bring the latest technology for the growth of agriculture and animal husbandry at their doorsteps. But First Time in Gujarat live broadcasting of Krushi Mela-2012, Petlad; has been made online on our university website www.aau.in by ITC, AAU, Anand.

Online Email/Firewall Account

Application for opening new email or firewall account for AAU Employee and Student has been developed by Information Technology Center, Anand Agricultural University, Anand.

Online Admission Process

Information Technology Center, Anand Agricultural University developed online admission application for our four universities (Anand, Navasari, Junagadh, Dantiwada). This application used for "online course apply" at our university including UG/PG/Polytechnic courses.
URL for the website is: **http://www.gsauca.in**



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Online Convocation:

Information Technology Center, Anand Agricultural University is also handling the Online Convocation Application for the students. They can apply online at **www.con.aau.in** and fill up their forms to get degree certificate.

Online Job Application for Teaching & Non-teaching Posts:

Information Technology Center, Anand Agricultural University has introduced the website first time in SAUs of Gujarat Online Job Application; candidates can apply online at **www.jobs.aau.in**.

Computer Lab Facility

Information Technology Center, Anand Agricultural University established a new computer laboratory for students and farmers.

Wifi Internet Connection

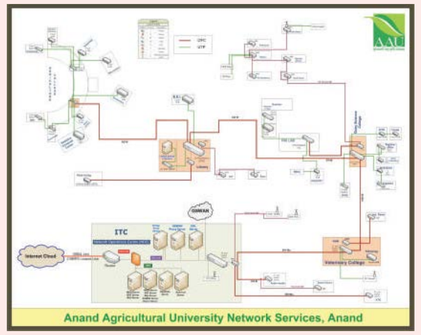
Information Technology Center, Anand Agricultural University started wifi internet connection covering campus region.

LAN CONNECTIVITY

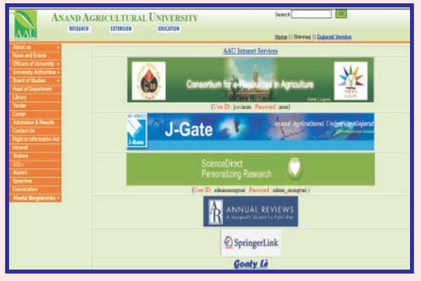
Dedicated 2 mbps LAN connectivity with fiber optic back bone connects more than 500 computers across the University campus.

WEB SITE FOR AAU

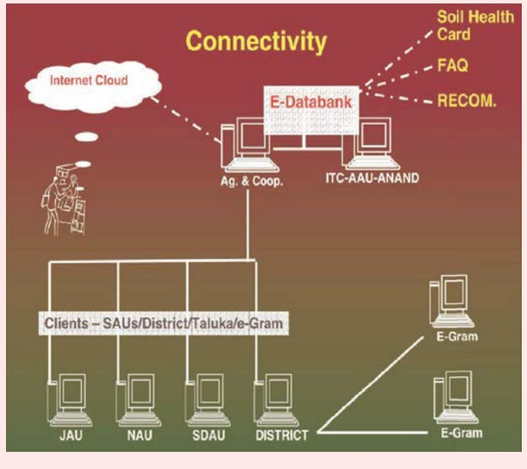
ITC has prepared a website for Anand Agricultural University; the domain name is *www.aau.in*. This website includes various aspects and activities of Anand Agricultural University like administration, faculties, colleges, education, and extension, e-library, tender, Right to Information Act etc. Further, a web mail service has been incorporated in the website enabling the users to read and reply their e-mails from any computer of LAN. There are more than 4000 e-mail users. The website has been maintained and updated regularly.



Anand Agricultural University Network Services, Anand



SOIL HEALTH CARD



AAU has the distinction of developing the Soil Health Card for the entire State with headquarters at AAU Anand. The card is a result of soil health data collected from farmers fields across Gujarat. An exclusive software providing a decision support to any farmer across the State is achieved just by logging at the specially created website. It is an endeavor to put crop knowledge at the farmers fingertips.

The12th National Award was conferred upon Anand Agricultural University for e-Governance (2008-09) by the Department of Administrative Reforms & Public Grievances, jointly with Department of information Technology, Government of India, New Delhi, on 12th February, 2009 at GOA for its contribution in the field of Outstanding performance in Citizen-Centric Service Delivery.

EDUCATION

AAU imparts effective education in Agriculture and allied sciences through residential semester system of under-graduate and post graduate degree programmes, awarding degrees in seven faculties namely, Agriculture, Dairy Science, Veterinary Science & Animal Husbandry, Agriculture Engineering, Food Processing Technology & Bio Energy, Agricultural Information Technology and International Agri. Business Management.

B. A. College of Agriculture, one of the oldest colleges of agriculture in the country, started in 1947. It provides education and involves exposure to concepts, skills and knowledge in agriculture and related sciences. The students who pass Std.XII examination (Physics, Chemistry, Biology and English) and entrance test conducted by the Government are eligible for admission in graduate degree programme.

Agriculture (Vaso) and Horticulture (Anand) wings have been started in 2012 under B.A. College of Agriculture with intake capacity of 50 students each. The students who pass Std. XII examination (Physics, Chemistry, Biology and English) and entrance test conducted by the Government are eligible for admission in graduate degree programme.

Sheth M.C. College of Dairy Science was started in 1961. Earlier, the students were being awarded Diploma in Dairy Technology (IDD, Indian Dairy Diploma); and after the 1989, students are being awarded the Degree of B.Tech. in Dairy Technology. The students who pass Std.XII examination (Physics, Chemistry, Mathematics and English) and JEE examination are eligible for admission in graduate degree programme.

College of Veterinary Science & Animal Husbandry, The College of Veterinary Science and Animal Husbandry, Anand was established in August 1964. It is playing key role in augmenting growth of livestock sector in state by producing high skilled technical manpower and conducting high quality research to address problems of livestock sector. The college has excellent (100%) placement records for its graduates and post graduates. The students who pass Std. XII examination (Physics, Chemistry, Biology and English) and entrance test conducted by the Government are eligible for admission in graduate degree programme.

NEW INSTITUTES

College of Food Processing Technology & Bio Energy has been established during eleventh five year plan to cater the huge demand of specialized human resource for the fast growing food industry. College offers four years B.Tech. degree in Food Processing Technology. The students who pass standard XII examination (Physics, Chemistry, Mathematics & English) and JEE examination are eligible for admission. The present intake capacity is 35 per year. Various courses on Food Engineering, Food Processing Technology, Food Quality Assurance, Food Business Management, Bio Energy and other related subjects are taught.

The College of Agricultural Information Technology was established in the year 2009 with a vision to harvest the fruits of applications of Information and Communication Technology in Agriculture and allied sectors through a technically skilled workforce. The college offers a four year undergraduate residential B.Tech. program with an intake capacity of 30 students in Agricultural Information Technology, which is first of its kind in Gujarat state and second in the entire country besides Tamil Nadu Agricultural University. Students passing class 12th with Science stream (A or AB group) and a valid JEE score are eligible to seek admission on merit basis. The curriculum of B.Tech. (Agricultural Information Technology) is a balanced blend of Agricultural Science and Information and Communication Technology (ICT) designed with a central objective to bridge the gap between the skills of a technocrat and a farmer by introducing innovative practices of automation and information mitigation through ICT.

International Agri-Business Management Institute was established in August 2008. Institute offers two years professional P.G.degree "Master of Business Administration" in International Agribusiness (MBA-IAB) with a core focus on agribusiness and international trade. The programme is aimed to craft professional business leaders and entrepreneurs in the food and agri-business sector. The students who pass Bachelor's degree in Agriculture and allied disciplines are eligible for admission. The programme offers courses of management and agribusiness, along with the industrial interface in the form of summer training and project work. The institute has excellent placement records (100 %) from its inception. It provides a good educational environment with the core support and dedication of faculties to make the students competitive in the business galaxy and also to become a good human being to the society.

College of Agricultural Engineering and Technology has been started in July 2008 at Godhra about 90 km away from Anand. The college offers four years B.Tech degree programme. The students who pass Std. XII examination (Physics, Chemistry, Mathematics and English) and JEE examination are eligible for admission.

Polytechnic in Agriculture at Anand and Vaso were started in 2008 and 2009, respectively with an objective to impart theoretical and practical training to develop skilled manpower in agriculture for three years duration. The eligibility for this course is Secondary School Certificate (10th) examination of Gujarat state or other equivalent examination along with English as compulsory subject. The intake capacity of the polytechnic is 35 seats.

Polytechnic in Agricultural Engineering, Dahod was established in 2008 with an objectives to encourage modern and hightech agricultural practices for betterment of agriculture in tribal dominated area of Gujarat. It provides Diploma in Agricultural Engineering of three years duration. The eligibility of this course is Secondary School Certificate (10th) examination of Gujarat state or other equivalent examination along with English as compulsory subject with intake capacity of 35 seats.

Sheth D. M. Polytechnic in Horticulture, Vadodara offers three years diploma in Horticulture which was established in the year 2009 with an objectives to impart theoretical and practical training to the secondary passed students to develop skilled manpower in Horticulture. The eligibility of the course is Secondary School Certificate (10th) examination of Gujarat state or other equivalent examination. The intake capacity of the polytechnics is 35 seats.

Polytechnic in Food Science and Home Economics, Anand was established in 2008 with an objective to conduct academic program leading to Diploma in Nutrition and Dietetics (three years duration) and develop a perspective for multi-disciplinary experience. The students who pass Secondary School Certificate (10th) examination of Gujarat state or other equivalent examination along with English are eligible for admission. The polytechnic has intake capacity of 35 seats.

Institute of Distance Education, Anand (IDEA) The scheme was incepted at ATIC "Krushi Gangotri" AAU, Anand during 2011-12 with a prime objective to accomplish distance education in the field of agriculture in the State. At present Masters courses in M.Sc (Agricultural Journalism) and M.Sc. (Agricultural Marketing) are run through distance mode. As a part of extension activities, Diploma course on “Diploma in Agricultural Extension Services for Input Dealers” (DAESI) is ongoing. Total 40 input dealers sponsored by Dhanuka Agritech Limited (Gujarat region) were enrolled in DAESI course. Input dealers study through distance mode. All the sessions /classes were conducted on Sunday. The course on distance mode is framed in eight modules including field visits on the base of MANAGE guidelines.

The University runs following PG courses leading to Masters and Ph.D. in various faculties.

Agriculture
Agricultural Chemistry & Soil Science
Agricultural Economics
Agricultural Entomology
Agricultural Extension Education
Agricultural Meteorology
Agricultural Microbiology
Agricultural Statistics
Agronomy
Horticulture
Nematology
Plant Biochemistry
Plant Biotechnology
Plant Breeding and Genetics
Plant Pathology
Plant Physiology and Ecology
Seed Technology

Dairy Science and Technology
Dairy Chemistry
Dairy Engineering
Dairy Microbiology
Dairy Technology
Food Biotechnology

Veterinary Science and Animal Husbandry
Anatomy
Animal Genetics and Breeding
Animal Biotechnology
Animal Nutrition
Animal Physiology and Bio Chemistry
Livestock Production Management
Parasitology
Poultry Science
Reproductive Biology
Veterinary Extension and Animal Husbandry
Veterinary Medicine
Veterinary Microbiology
Veterinary Obstetrics and Gynecology
Veterinary Pathology
Veterinary Pharmacology and Toxicology
Veterinary Public Health
Veterinary Surgery

Food Processing Technology & Bio-Energy
Food Processing Technology

International Agri-Business Management

Agricultural Engineering
Renewable Energy Engineering
Soil & Water Engineering
Farm Machinery & Power Engg.

The university has well equipped laboratories. Also, the university has two commercial dairy training centers, one ***Anubhav Dairy*** and another ***Vidya Dairy*** where one full year of residential hands-on-training is imparted. Two pilot plants, one for pulse processing and another for biodiesel production are also installed. In addition to above facilities, eleven experiential learning centers in faculties of Agriculture, Veterinary, Dairy, Horticulture and Food Processing Technology have been established.

Students' Welfare

Students' Welfare activities / facilities include sports, debate, residential, recreation, health, adventure, career counseling, leadership and personality development trainings, spoken English, college magazine, cultural activities, NCC, NSS, planning forum, Special day celebration, tree plantation, health checkup etc. for all around development of students and placement cell are given prime attention in the university. Apart from this, Alumni Associations of three faculties are active and organize conferences, seminars, workshops, etc. from time to time so that its members and others interested can keep pace with new developments in their chosen fields.

Student Amenities

Hostels

All the colleges of AAU have their own hostels with good mess facility. Other facilities include pure water for drinking, TV room, yoga room, hot water for bathing, internet connectivity, etc. in the hostels. Telephones as well as STD booths with ISD facility, Bank, ATM centres, laundry, tailor shop, cycle store, etc. are also available in the university premises.

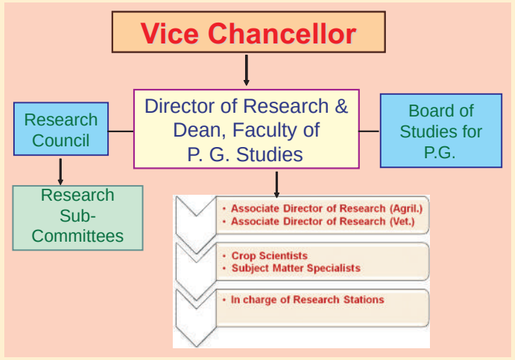
Health Facilities

A health centre having qualified doctor provides primary health care services to employees, their families and students residing in the campus. Services of special doctors are also available on specified days.

Dr.M.D. Patel Regional e-Library is the University Library, currently in possession of 19 Foreign & 74 Indian Journals, 78714 Bar coded Books & Reports, 3376 theses, and 132 digitized rare books, and several e-resources all for the utility of the users of the Institution. Moreover, the e-transaction and e-circulation of books by using Web Opac and PVC Library Smart card have fortified the Library system. The e-domain of Dr.M.D.Patel Regional e-Library is further enriched with online access to Consortium of e-Resources in Agriculture – the e-Journals consortium courtesy ICAR, CRC NET-based e-books and database like Food Science & Technology Abstracts and Commonwealth Agriculture Bureau International (Full Text) along with standard stored Premium database on AAU server. The Cyberary is the crowning glory of the Library with 37 work stations, 2 Linux servers and 4 mbps connectivity, making the e-content search a dream-come-true, catering to the educational and research needs of the users.

RESEARCH

Research activities of AAU focus on productivity, sustainability and improvement of the socio-economic condition of the farming community. These goals of AAU encompass newer areas such as Bio-technology and Nano technology, Organic Farming, Seed technology, Climate change, Soil Health Card, growing medicinal plants along with the conventional crops and processing of food products. It has been focused on distance hybridization on field and fruit crops including vegetable crops.



High quality research like identification of genome for preventive and curative measures against infection/infestation of diseases adversely affecting higher productivity in poultry / livestock has been started in veterinary field besides different measures in animal nutrition. Emphasis is given on uplifting the standards of milk and milk products to compete at international level under the Dairy Technology research. Food Processing Technology and Bio Energy are new and promising areas in Post Harvest Technology, Food Irradiation and Bio Fuel. It has the distinction of developing an end-to-end integrated processing plant.

The university has ultra modern laboratories with sophisticated instruments and excellent trained research staff besides well managed farms at different locations.

Research Projects Sanctioned/Continue

Besides, state non plan schemes as well as ICAR Co-ordinated schemes, the following Ad-hoc schemes / projects were sanctioned during 2004-12 :

Sr. No.	Funding source	Years								Total
		2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	
1	ICAR-Ad-hoc Projects	08	06	06	04	02	03	03	05	37
2	NAIP	-	-	-	-	03	02	-	01	06
3	GOI-DBT/DST	04	03	04	09	03	03	03	06	35
4	GOG	01	06	01	01	01	03	04	05	22
5	Overseas	-	01	01	-	-	-	-	-	02
6	Other Agencies	09	17	21	19	26	27	39	42	200
7	RKVY	-	-	-	-	12	03	04	01	20
8	Plan	58	11	-	-	15	-	03	08	95
9	NHM	-	04	03	01	03	-	06	03	20
	Total	**80**	**48**	**36**	**34**	**65**	**41**	**62**	**70**	**437**

RESEARCH SUB-COMMITTEES

Approval of new programs, monitoring & releasing of new variety/technology

Faculty of Agriculture

- Crop Improvement (Plant Breeding & Genetics, Plant Biotechnology, Plant Physiology and Biochemistry)
- Crop Production (Agronomy, Soil Science, Horticulture, Agricultural Meteorology and Microbiology)
- Plant Protection (Entomology, Plant Pathology and Nematology)
- Social Science (Agricultural Statistics, Agricultural Economics, Agricultural Extension Education, Agricultural Information Technology & Agri-Business Management)

Faculty of Veterinary Science

- Animal Production (Animal Biotechnology, Animal Genetics and Breeding, Animal Physiology & Bio-chemistry, Livestock Production Technology and Management, Animal Nutrition, Reproductive Biology and Poultry Sciences)
- Animal Health (Veterinary Medicine, Veterinary Microbiology, Veterinary Pharmacology, Veterinary Surgery, Veterinary Pathology, Gynaecology and Obstetrics, Veterinary Public Health, Anatomy and Veterinary Clinics)

Anand Commercial Layer (Hybrid)

Faculties of Dairy Science, Agricultural Engineering and Food Processing

- Dairy Science, Agricultural Engineering and Food Processing Technology & Bio Energy

Continuous Basundi Making Machine

Bio- Diesel Plant

AICRPs

- Rice
- Maize
- Castor
- Forage Crops
- AINRP on Tobacco
- AINRP on Medicinal & Aromatic Plants
- Micro and Secondary Nutrients and Pollutant Elements in Soils and Plants
- Weed Control
- Cropping System Research- OFR
- Biological Control of Crop Pests and Weeds
- Plant Parasitic Nematodes
- AINP on Pesticide Residues
- Agrometeorology
- Seed Technology Research (Crops)
- AINP on Agricultural Ornithology
- Poultry for Eggs
- Improvement of Feed Resources and Nutrient Utilization in Raising Animal Production

Technologies Recommended for Farmers / Scientific / Entrepreneurs

Sr. No.	Name of the Discipline	No. of recommendations finalized for farmers					
		2007	2008	2009	2010	2011	2012
1	Crop improvement	07	03	05	05	10	06
2	Crop production	14	11	16	18	13	08
3	Plant protection	08	06	18	11	39	14
4	Dairy Science, Agri.Enginering & Processing	05	05	14	09	09	05
5	Animal Production	09	07	14	16	10	19
6	Animal Health	09	--	08	15	10	05
7	Social Science	01	06	03	02	05	02
	Total	**53**	**38**	**78**	**75**	**93**	**59**

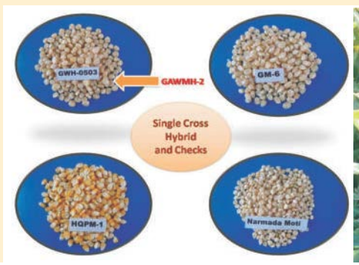
Technologies Developed

- Technology for production of instant tur dal powder
- Roughage block making machine
- Seed extractor for Tomato / Lime,
- Seed pelletizer for small & irregular seeds
- Mechanized roughage baler
- Aonla stone extracting-cum-shredding machine
- Seed extractor for Brinjal
- Seed extractor for Chilly seeds
- Development of low cost evaporative cooling storage structure
- Vanaspati kachara gas plant
- Family size vegetative waste biogas plant
- Compact model of biogas plant
- Recovery of water from spent gobergas slurry
- Simpler and cheaper biogas plant based on KVIC design
- Improved compost technique for decomposition of biomass and its comparison with NADEP compost method.
- Technology for production of dehydrated spinach coriander leaves
- Technology for production of dehydrated fenugreek leaves
- Tractor operated multi utility elevator platform attachment
- Technology for production of dehydrated aonla flakes.
- Controlled environment greenhouse for hot and dry climatic conditions of .
- Seed Dehuller for Jatropha
- Improved oil expression technology for maximum recovery of oil from Jatropha seed
- Precision weight based grader for selected fruits.
- Pre-cooling protocol for banana for extension of shelf-life.
- Technology for production of dehydrated coriander leaves
- Pricking machine for Aonla fruits
- Earth tube heat exchanger assisted low humidity seed storage system
- Technology for production of basil powder
- Pre-cooling Protocol to Maximize Shelf Life of Mango Fruit
- On farm post harvest activity hut
- Evaporative cooling system for transportation of perishable commodities
- Pre-cooling protocol to maximize shelf life of aonla fruit
- Production technology of ready-to- serve unripe mango beverage (pana)
- Production technology of pumpkin powder and its utilization for various food products
- Value added (high fiber) bun.
- PGPB consortium as biofertilizer cum bio pesticide

Seed Production

Seed is the main key factor for raising the production and productivity of any crop and for wide adaptability of released variety, Anand Agricultural University is producing nucleus as well as breeder seeds in enough quantities to cater the needs of seed industry in public and private sectors. The major quantity of seeds was produced in paddy and wheat followed by maize.

Nucleus seed of different crop varieties, following standard methods to ensure 100% genetic purity, was also produced keeping in view the spread of the variety and future needs.



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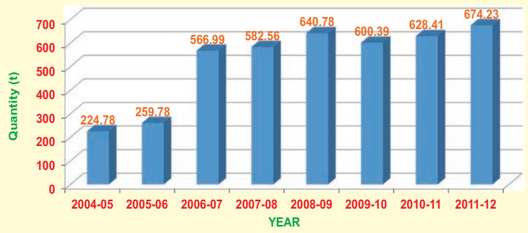
Apart from the production of nucleus and breeder seed, the university has also managed to produce foundation / certified / truthful / general seed of the most adapted varieties in large quantity for their distribution among the farmers in the brand name "***Anubhav Seed***". The University also sells seedlings of vegetable crops, tobacco and medicinal and aromatics plants as well as graft and sapling of horticultural crops.

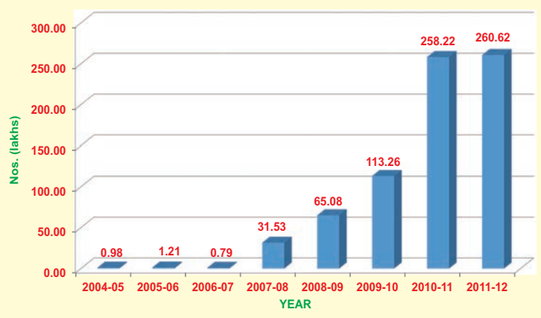
Under the Mega Seed Project, the University has produced different category of seeds for farmers. Seeds produced (q) during last five years are depicted below. Similarly, seedlings of vegetable, horticulture crops and tobacco have been supplied to farmers to the tune of about 60 lakhs every year.

Seed Production for Farmers

- Large No. of Varieties Released by University
- Good Adaptability
- High Demand of quality and truthful seed
- Production initiated under brand name "Anubhav Seeds".



Seedlings/grafts/plants Production for Farmers



AGRICULTURAL EXTENSION EDUCATION

The Directorate of Extension Education has to plan, coordinate, organize and guide the extension education programs in the university and to ensure efficient working of the extension education activities in close coordination with the development departments, voluntary and private organizations. The Extension Education Council recommends the extension education programmes / activities of the university.

Zonal Research and Extension Advisory Committee (ZREAC)

The Transfer of Technology and future research programmes are based on the feedback received from development departments in ZREAC, which is held regularly two times in a year for *kharif* and *rabi* seasons. The ZREAC is comprised of the Director of Extension Education, Director of Research, Deans of the faculties, Crop and Subject Matter Specialists, members of development departments, co-operative sectors, industries and progressive farmers.

Extension Education Institute

The Extension Education Institute, Anand caters to the extension training needs of middle level functionaries of various development departments of Western Zone States namely Gujarat, Rajasthan, Madhya Pradesh, Chhatisgarh, Maharashtra, Goa and UTs of Diu, Daman and Dadara Nagar Haveli. The aim is to improve upon their job performance, wherever they are working in different capacities.

T&V Training Centre

The Anand Agricultural University has taken up the task of training for the extension personnel of the Department of agriculture through the Training and Visit, Training Centers at Anand and Vadodara.

Krushi Mahotsav

The Government of Gujarat started a new programme called *Krushi Mahotsav* for connecting the farmers with agricultural scientists in order to have a sincere and faithful interaction. The programme has the following objectives :

(i) Creating awareness amongst the rural masses regarding scientific innovations in crop production practices, farms implements, water conservation, irrigation methods, animal husbandry etc. and taking these innovations to the farming community through the concept of people's participation.

(ii) Bringing agricultural and rural development programmes at village level for the betterment of peasants implemented by various State Government Organizations and thereby to create an atmosphere to motivate the farmers for their participation in such programmes.

(iii) The ultimate objective of the whole programme is to make the farmer's income double in a span of five years.

In total 612 personnel including the Nodal Scientists at District and Taluka levels, other scientists, PG Students and supporting staff have been assigned the duties to move with *Kisan Rath* in the villages. Two groups of scientists were formed to escort the *Kisan Rath* for 15 days each. During the visits in the villages, the scientists have delivered talks and interacted with farmers. They have guided them to prepare a crop production plan at village as well as individual levels, plant protection measures, farm implements, water conservation, irrigation methods, bio-fertilizers, bio-pesticides, bio-control of insects / pests, animal husbandry, cultivation practices of major field crops, fruit crops, vegetable crops and medicinal plants of the area. Further, the Soil Health Cards and manuals of model action plan of crop production were distributed amongst the farmers.

Type	Name of Center	Location
Training Centers for Extension Workers	Extension Education Institute	Anand
	Training and Visit Training Centre	Anand
Training Centers for Farmers /Farm Women/ Rural Youth	Sardar Smruti Kendra	Anand
	Krushi Vigyan Kendra	Devataj, Dahod, Arnej
	Tribal Training Centre	Dahod
	Tribal Research cum Training Centre	Devgadhbaria
	Tribal Women Training Centre	Devgadhbaria
	Department of Extension Education	Anand
Advisory Services	Farm Advisory Services	Anand
	Agricultural Technology Information Centre	Anand
	Transfer of Technology Centre	Anand, Arnej
	Centre for Communication Network	Anand
	Agro-Advisory Services	Anand
	Publication Unit	Anand
	Agri Polyclinic Centre	Dahod

Certificate Course

Baking Technology
(Two batches in a year)
Duration : 20 weeks

Poultry Training
(Three batches in a year)
Duration : 10 weeks

Gardeners Training
(One batch in a year)
Duration : 24 Weeks

New Certificate Courses

New Certificate Courses sanctioned under plan scheme for training during 2011-12

- Food Processing Technology
- Organic Farming
- Weed Management
- Integrated Pest Management
- Medicinal & Aromatic plants
- Seed Production

New extension centers

- Pashu Vigyan Kendra, Limkheda
- Dairy Vigyan Kendra, Vejalpur
- Training Centre, Jabugam
- Transfer of Technology Centre, Godhra
- Farm Technology Training Centre, Sansoli

New Scheme

- Seed Village Programme

Mass Media

- Radio Talks by the scientists of the University
- TV Talks through DDK, Ahmedabad in *Gram Jagat* Programme
- Press Meet
- Publication of AAU NEWSLETTER quarterly
- Research Recommendations for Farmers - in Gujarati for the use of extension functionaries and farmers of the State
- Publication of monthly Farm Magazine "*Krushigovidya*"
- Publication of Agricultural Literature

THRUST AREAS OF RESEARCH

Crop Improvement

- Development of non-aromatic rice varieties for export purpose having long slender grain with better cooking quality.
- Genetic enhancement of yield with fine grain quality in drilled paddy, durum wheat and minor millets.
- QPM maize varieties/hybrids.
- Breeding of maize varieties/hybrids for industrial uses and high oil content.
- Development of high yielding *arhar* varieties with multiple disease (Wilt, PSB and SMD) resistance.
- Development of drought and salt tolerant varieties of gram coupled with resistance to biotic stresses.
- Breeding for alternative use of tobacco with less nicotine content.
- Yield and quality improvement in *deshi* cotton.
- Hetrosis breeding in vegetable crops, viz., chilli, brinjal, tomato and okra with resistance/tolerance to major diseases / pests.
- Development of high yielding varieties / hybrids of important vegetable crops with better nutritional quality and wide consumer preferences.

Bio-technology

- Identification, molecular characterization and cloning of genes for resistance tolerance to important biotic and abiotic stresses of major crops of the region – viz., rice, wheat, pearl millet, pigeon pea, gram, cumin, cotton and major vegetables.
- Development of technologies for mass multiplication of elite material of important horticultural crops of the region.

Production Technology

- To identify and develop varieties of green manuring crops for better N fixation.
- To develop strategy for precision farming for enhancement of productivity of the major crops of the region.
- Development of technology for reduction of water use in paddy.
- Promotion of organic farming for export quality produce and its certification for marketing.
- Use of Geographical Information System (GIS) and Remote Sensing for forecasting weather parameters, climate base animal/crop diseases as well as agro-advisory services.
- Integrated crop management through IPM, IDM and INM in major crops for sustainable cropping system.
- Biological control of nematodes and important diseases of major crops.
- Development of bio-pesticides for control of pests of major crops.
- Development of crop production technologies for efficient use of conserved moisture by important *rabi* crops wheat (durum) and gram in *Bhal* area.

Horticulture

- Introduction of remunerative new horticultural cropping systems in respect to array planting.
- Potato research for Anand region.
- Organic ginger and garlic production in tribal areas.
- Enhancing production and plantation of cashew nut and custard apple in tribal areas.






Animal Science

- Molecular characterization of genes for milk/egg production, growth, reproduction and diseases resistance.
- Development of DNA vaccine and DNA based diagnostic technique for important diseases of cattle.
- Conservation of the indigenous breeds of cow, buffalo and poultry of the State.
- Development of poultry strains adapted to local climate as well as for high feed conversion efficiency.

Dairy Science / Food Processing

- Development of functional food/pro-biotics for enhancement of nutritional status.
- Development of probe and sensors for detecting the quality and safety of food products.
- Bio-processing of food industry waste for control of pollution and generation of energy.
- Application of radiation technique for extension of shelf life of food products.

Agricultural Engineering

- Research on management practices for efficient utilization and recycling using RS and GIS
- Rainwater harvesting and management for higher water productivity
- Artificial groundwater recharge to enhance groundwater development potential.
- Development of improved farm equipments for timely operation and higher input use efficiency with safety and comfort to operators.
- Development of crop, site and gender specific farm equipment.
- Mechanization of horticulture and MAP crops.
- Development of climate resilient engineering techniques.
- Techniques for efficient utilization of non conventional energy (renewable) in agriculture
- Agricultural product processing and post harvest management

Agricultural Information Technology

- Sensor Networks
- Optimize agriculture production and reducing human intervention in :
- (a) Monitoring pest and diseases in field
- (b) controlling moisture in the cropped area
- (c) Better handling / monitoring live-stock
- Bio Informatics
- Simulation and Modeling using software looks like SIMUL8, VisSim etc.
- Geographical Information System, Data warehousing and Data Mining using tools like SPSS and MATLAB with be initiated.
- Interactive Voice Response System (IRV)

Food Processing Technology & Bio Energy

- New and innovative nutrition rich foods and functional foods.
- Increase keeping quality of fresh and processed foods – shelf-life extension and innovative packaging
- Bio sensors, new additions (Natural sources) as preservative and colour
- Simple and indigenous process control for food processing lines
- Traditional and ethnic food standardization
- Development of better post harvest technologies and equipment for cereals, oilseeds, pulses and horticultural crops
- Value addition and quality product development
- Development of technologies for effective utilization of various renewable energy sources and biomass



Continuous Shrikhand Thermization Machine



New Initiatives

Special Programmes

i. **Varsha Calendar**
The University has developed a calendar called "*Varsha Vigyan*" for forecasting rainfall on daily basis for each district of Gujarat for crop planning by the farmers.

ii. **Soil Health Card Programme (*e- Krishi Kiran*)**
E-based software for soil health card have been prepared, which includes crop planning, soil fertility status, guidelines for new crops, FAQs etc.

iii. New Research Stations

Sr. No.	Station	Research Mandate
1	Jabugam	Agriculture College (wing)
2	Kankanpur	Instructional Farm of Agricultural Engineering College, Godhra
3	Khambholaj	Horticultural, Medicinal & Aromatic Plants Research
4	Meenawada	Kapila Cattle Research Centre
5	Nenpur	Agricultural Extension
6	Ramnamuvada	Goat Research
7	Sansoli	Integrated Farming System, Castor Research
8	Vaso	Polytechnic in Agriculture, College of Agriculture (Wing)

v **DVAR (Direct Video Assisted Redressal)**
Interactive, No literacy is required to operate, Scalable, Community and case specific, Available 24×7, Virtually no overhead, Innovative tool to create awareness

MoU Signed/Enforced

Sr. No.	Name of the party with whom MoU is signed	Focus Area/Purpose of MoU/LoC
1	Greenfield Hydroponics System Inc, Ontario, Canada and Samarkha Village Dairy Cooperative Society, Samarkha, Anand.	Solar/wind powered/portable greenhouse for growing fodder for sustainable dairy development.
2	Central Institute of Freshwater Aquaculture, Bhubaneswar	Promotion of aquaculture related activities in the state of Gujarat in particular and the region in general
3	University of Leicester, LE1 7RH, UK and The University of Insubria, Italy	To investigate genetics of Lesser Flamingos through DNA analysis
4	Indian Institute of Foreign Trade, New Delhi	Enhancing training programme for exporters, farmers, trader which leads to improve efficiency & effectiveness of agriculture produce/service.
5	Care Group, Baroda	Research, Post-Graduate Teaching and Extension related to ophthalmic affections in veterinary patients.
6	Marshall Breeders	Veterinary Consultancy
7	Kemrock Agritech Private Limited	Liquid Biofertilizer Tech Licensing
8	Gujarat State Fertilizers and Chemicals Ltd	Liquid Biofertilizer Tech Licensing
9	Shree Nijanand Dairy Farm	Dairy Consultancy
10	CCS Haryana Agricultural University	Reciprocal Tech promotion & commercialization
11	Gujarat Agro Industries Corporation Ltd.	Liquid Biofertilizer Tech Licensing
12	Panchamrut Dairy	Dairy Consultancy
13	Sardar Sarovar Narmada Nigam Ltd.	Irrigation and Agriculture Technology Demonstration and Extension activities in Narmada Command Area.
14	Dhanuka Agritech Limited, Gurgaon- 122002	To Transform Input Dealers into Para-professionals and enable them to serve the farmers better, thereby strengthening the Agricultural Extension System
15	Abellon CleanEnergy Limited, Ahmedabad	Intended to facilitate the collaborative programme of research training, information dissemination and exchange of faculty students and staff

Variety Registration (PPV & FR) and IPR

- **Maize :** Gujarat Maize 2, Gujarat Maize 3, Gujarat Maize 4 & Gujarat Maize 6 (Registered)
- **Rice :** Gujarat Rice 103 (Mini Mussouri), Gurjari and Gujarat Rice 7 (Under Process)

Patents Applied / Filled / Obtained

2008-09	2010-11	2011-12	2012-13
• Liquid Bio-fertilizer cultures(PGPB) • Continuous Basundi Making Machine (Applied) • DNA sequences to differentiate cattle and buffalo meat	• Geographical Indication of Bhalia Wheat (Obtained) • Pro-biotic culture(bacterial) • Safed musali based lassi • Patenting of Tissue Culture of Date-Palm • Jatropha Dehulling • Bio-Diesel Production method from jatropha seeds	• Twin Cylinder Scrapped Surface Heat Exchanger • Batch type Halwasan making machine(applied) • Tissue culture protocol for Date palm	• Native PGPB consortium (applied)

- More than 64212 accession numbers for buffalo genome were obtained for the gene sequences and submitted to the International Gene Bank. This is the First ever submission of sequences to the Gene Bank from Agricultural Universities of the India.

Business Planning and Development Unit (BPD Unit)

- Business Planning and Development Unit at AAU is a subproject under component -1 of the National agricultural Innovation Project of ICAR functioning in 2010 with majority funding from World Bank. The unit carries out agri business incubation activity by promotion of startup agribusinesses, promotion of agri entrepreneurship and nurturing agri innovations.
- Many entrepreneurs and start up businesses have taken the benefit of service provided by the BPD Unit. With regards to innovations nurturing, the BPD Unit is implementing the MSME Scheme "Support for Managerial and Entrepreneurial Development of SMEs through Incubators" and has wooed many agri innovators and submitted six proposals to MSME for funding support.
- The BPD Unit has won many awards and laurels. To mention a few, Times of India Social Impact Award by Times of India and JP Morgan for its Liquid Biofertilizer Technology, FGI award of excellence 2011 for best developmental work in Agriculture and a certificate of appreciation by ICAR.

Education Programmes

i. During the period of last five years, Anand Agricultural University has established modern laboratories with sophisticated equipment and well trained man power for Bio-technology (Plant, Animal and Food Biotechnology). Residue analysis of pesticides and heavy metals in different crops and crop produce.

ii. Under Experiential Learning Programme different pilot plants have been established with financial support from ICAR like Bio-pesticide; Value addition for Tomato, Aonla; High Tech Floriculture; Medicine and Aromatic plants ; Livestock and Poultry Feed Manufacturing and Dairy processing.

iii. Under Horticulture Mission Programme, Anand Agricultural University has developed Poly House and introduced new crops for crop diversification and income generation such as cashew nut, fig, capsicum, cut flower (Rose, Galardia, Gladiolus Cheri Tomato etc.).

iv. E-library has been set up for this region of Gujarat with the help of ICAR.

v. The new Faculty of Food Processing Technology and Bio Energy for development of post harvest technology, value addition and bio energy has been started.

vi. Faculty of Agril. Engineering is established at Godhra to cater the need of skilled manpower in the field of Agril Engineering in tribal area of the state

vii. Faculty of Agriculture Information Technology has been established, which will pave the way of ICT based agriculture.

viii. Department of Nanotechnology has been established.

ix. Started PG Diploma in Quality Assurance whereby entrepreneurs and graduates will be trained in developing quality parameters of different dairy products, their maintenance and requirement.

x. Establishment of Institute of Distance Education, Anand.

xi. Establishment of Demonstration - cum - Training Centre on Fisheries at Devataj.