

FIRST ANNUAL CONVOCATION

Convocation Address by

Dr. J.C. Katyal
Deputy Director General (Education)
I.C.A.R., New Delhi

Chief Guest



Junagadh Agricultural University
Junagadh

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His Excellency, the Governor of Gujarat State and Chancellor of Junagadh Agricultural University Shri Navalkishore Sharmaji, Hon'ble Minister of Agriculture, Gujarat State Shri Bhupendrasinhji Chudasama, Vice Chancellors of Agricultural Universities, Registrar of Junagadh Agricultural University, Deans of different faculties, university officers, Members - Board of Management, Academic Council, invited dignitaries, recipient of degrees, students of various faculties, representatives of Media and Press, Ladies and Gentlemen.

It is my great privilege and pleasure to be in the land of the Father of Nation Mahatma Gandhi whose contribution and character continue to inspire every young and old in our nation as well as the world. I begin my talk with my warm homage to that magnanimous soul.

This land has produced several eminent national leaders like Sardar Vallabhbhai Patel - the Iron man and unifier of India, Shri K. M. Munshi - a real visionary and educationist, Shri Morarjibhai Desai - a man of high moral

values and principles. Gujarat has also given a spiritual leader like Shri Dayanand Saraswati - we desperately need one such an illuminary at this juncture. The distinguished space scientist and father of space research Shri Vikram Sarabhai, is the pride product of this soil and one of his disciples Prof. A.P.J. Abdul Kalam is the worthy president of this country.

The very visit to this land is a great source of inspiration for me. I am grateful to His Excellency, the Chancellor and Vice Chancellor of Junagadh Agricultural University, Dr. B. K. Kikani for inviting me to this auspicious function and honoured to deliver the first Convocation Address of this university.

It is an immense feeling again for me to be in the midst of such a large assembly of academicians, scholars and students. While "people" are the wealth of a nation, the "young ones" are the hidden treasure of the nation. The educational institutions mould these young ones through education and training and strategically direct their energy and skills into productive channels. Then we are able to ride over the challenges and continue steadily on the path of progress.

Thanks to our great leaders, some of whom I mentioned earlier, who soon after independence started the chain of institutions and universities in the country. The results are now before us that we count at international level in almost all spheres, be it agriculture, atomic energy, business management, information technology, pharmaceuticals, space research and so on.

Agricultural University System in India is a good example of successful globalization of the Land Grant University System of USA. Pantnagar was the first agricultural university set up in India bringing about an integration of teaching, research and extension along with several other features of US Land Grant University System. Junagadh Agricultural University is a recent set up on the same pattern. The success of this system is well documented. You are all aware of it as you are a part of it. Looking at the success in the field of education and research, I get delighted seeing some contributions from this university and students occupying senior positions at national and international level.

Some Success Stories of Crop Research :

The success of efforts of agricultural scientists and farmers of Gujarat is eloquently reflected by the rank, the State occupies in the productivity and production of several crops at the national level, e.g. Castor (first), Groundnut (second/third), Cotton (third), Bajra (second), Mustard (third), Isabgul (first), Cumin (second), Fennel (first), Potato (first) and Onion (first). I on my own behalf and that of the agricultural fraternity compliment them on this occasion for their spectacular achievements.

Impact of WTO on Agriculture :

The World Trade Organization (WTO) came into existence on January 1, 1995 as a result of the Uruguay Round of trade negotiations. The trade flows in agricultural

commodities will be directed by the cost and quality considerations. India has natural blessings in producing large number of agricultural commodities by virtue of its diverse resource endowments and labour force. The country has comparative advantages in producing fine cereals like rice and wheat, pulses and oilseeds, fruits and vegetables, etc. However, the government will have to play definite role in regulating unwarranted fluctuations in prices of domestic agricultural commodities. Sanitary and Phytosanitary (SPS) measures continue to be major barrier in diversifying our exports. Fresh commitments should, therefore, be negotiated to substantially improve market access for products of particular interest to developing countries and ensure food and nutritional security.

Waste Land Development :

Land is an essential basic natural resource for agricultural activities, which in turn supports over 70 per cent of Indian population and also supplies basic raw materials to agro-based industries. The growing population has built up lot of pressure on land. Owing to its excessive exploitation, the land degradation is occurring at a faster rate than are anticipated. Such degraded lands, which can be brought under vegetation cover with reasonable effort, are currently under-utilized and which are deteriorating due to lack of water and appropriate soil management or on account of natural cause. The Integrated Wasteland Development Programme (IWDP) along with the National Wastelands

Development Board launched many schemes to attain equitable sharing of benefits and sustainable development. In this context, the extension and training measures needed to disseminate proven and new technologies.

Biotechnology and Transgenics :

Use of biotechnological tools in the recent past has opened a new research option to find solution to many problems. This has provided opportunities to modify crops to increase yield, impart resistance to biotic and abiotic stress and improve nutritional quality. Biotechnology gives scientists the tools to take quantum leap of understanding into the invisible - the submicroscopic world of genes. Especially, in agriculture, where gaps in basic science are still the rule and not the exception, biotechnological tools are uncovering the knowledge that will in turn perfect their development and uses. Many of the achievements of plant biotechnology are spectacular. Plant biotechnology is now a big business and it is attracting great deal of attention from scientists, industries and commerce. Plant biotechnology demands huge funding, abundant and assured resources, extraordinary commitment, coordinated and dependable team work and above all accountability. At present, the Bt transgenic is available only for cotton in India. Research work is in progress to develop the transgenic variety in crops like pigeonpea, chickpea and groundnut at ICRISAT and many others at ICAR institutes.

The gene transfers in plants grouped into the different categories from the view points of their application in crop

production, protection and improvement such as insect resistance, virus resistance, herbicide resistance, seed storage proteins, biochemical production and edible vaccines. In India Bt cotton has been adopted by farmers. Moreover, transgenic for quality, flower colour and shape, male sterility, bioreactors are the areas to be addressed in future in India.

High Tech Agriculture :

Agricultural production can be enhanced to many fold by computer aided programmes for irrigation, which include depth of irrigation and frequency, based on prevalent data of soil moisture and evapotranspiration. Management of agricultural residue through appropriate technology is also a tool for environment protection. Quality of agricultural produce can be improved to fetch good price and foreign currency. More over, cash crops can be grown widely during off-season by artificially created environment in green house. Designing of location and crop specific agricultural implements/machineries can be done with the help of CAD/CAM programme. Developed technologies for utilization of solar and wind power (especially in coastal area of Gujarat) are useful for electricity generation and on farm electrification.

Processing and Value Addition :

Our country has made tremendous strides in boosting the farm production. However, its level of processing is far below in comparison to other countries. Agro processing

enhances value of agricultural commodities, generate more income and employment opportunities and transform the farmers from merely producer to processor.

Value addition to crop products has assumed vital importance in India due to change in socio economic conditions, industrial growth and urbanization. Moreover, looking to the changing scenario and economic globalization such items turned to have a high export potential. It does not merely satisfy producers and processors by way of higher monetary return but also to appease the consumers with better taste and nutrition. A vision of comprehensive understanding of processing techniques to make good quality products, readily acceptable to consumers is very much essential.

There is dire need for developing appropriate techniques and equipments for preparation of various value added agricultural products. The development of agro processing industry will provide ample opportunities for rural employment and prevent migration to urban areas.

Bio-Fuel :

There is an urgent need to think about "Alternative Petroleum Product" in line with the "Alternative Medicine Concept" in view of the increasing cost and use of petroleum products depleting resources and also the expenditure on foreign exchange. This is precisely the reason that America, Italy and Japan have started using "Bio-Diesel" and India too

is making headway in this direction. Gujarat State Road Transport Corporation ran a bio-diesel operated bus from Gandhinagar to Ahmedabad. Indian Oil Chrysler has traveled 6000 km in India in C-class Mercedes Benz run with bio-diesel! Bio-diesel is a boon to a country like India having a lot of plants like *Jatropha*, *Jajoba* and *Mahuda*. *Jatropha* has the greatest potentiality. *Jatropha curcas*, a plant traditionally used for medicine, pesticides, cosmetics and as hedges, has recently shown its potential as an energy plant.

Soil and Water Conservation :

India is endowed with a rich and vast diversity of natural resources particularly soil, water, weather, flora and fauna. Amongst the national resources, soil is a finite, non-elastic and non-renewable asset.

The country faces shortage of water, a key input for agricultural production, despite annual precipitation of 400 M ha m due to erratic and uncertain rain. A substantial portion of ground water in arid, semi arid and coastal areas is of poor quality .

Judicious integration of all water resources of farm, system and basic levels and also appropriate methods, safe usage poor quality water including sewage water will be essential for sustaining agricultural production and domestic and industrial demands.

Management of Problematic Soils :

Soil problems like soil erosion, salt affected soil, soil

hardness, shallow soils, soil swelling, water logging are common in Gujarat. Water logging is a major constraint in Bhal, Ghed and Command areas. About 66 per cent borwells have poor quality water.

Management of salt affected soil is taken up by State Agricultural Universities and State Department of Agriculture. Soil conservation works are taken up by GLDC. New Awareness of Biotechnology, tissue culture and greenhouse agriculture are yet to be greeted amongst the farmers in the problematic soil areas.

Crop Diversification :

Crop diversification has been recognized as an effective strategy for achieving the objectives of food security, nutrition security, income growth, poverty alleviation, employment generation, judicious use of land and water resources, sustainable agricultural development and environmental improvement. The opportunities for crop diversification emerge from technological break-throughs, changes in demand patterns, development of irrigation availability, marketing infrastructure, and new trade arrangements.

Crop diversification essentially means moving away from growing a single crop to a number of crops. A pre-condition for sustaining the process of crop diversification is the availability of adequate marketing infrastructure and enabling environment for emergence of mar-

keting support service. Infrastructure needed for sustaining crop diversification include rural roads, storage structures, transportation facilities, cold storages, irrigated vans, packaging services, processing facilities, branding systems and quality testing facilities. Research on crop diversification is needed in present situations.

Low Cost Technology :

Agriculture today has become so much expensive and requires lot of capital. Besides the unstable production, prices for inputs like seed, pesticides and fertilizer etc. going to increase day by day. Now the Agriculture is not economical unless stable production can be obtained. If farmer pays attention to reduce cost of crop production they can get more profit with less expenses. Besides reduction in soil productivity problems arise of limited water supply and poor quality, which are major constraints in getting expected production. Therefore, in present situation, research on low cost technology is essential.

Animal Husbandry :

Though India has achieved a status of largest milk producer country in the world, there is still vast scope to improve the productivity of Indian livestock through organized breeding and effective utilization of fodder resources. There is also a need of a policy on end use of uneconomic and unproductive animals.

Gujarat possesses rich resources of animal biodiversity and is proud owner of Gir and Kankrej cow, Jaffrabadi, Surati, Mehsani buffaloes, Zalawadi, Surati Goat, Patanwadi sheep and Kathiawadi horses. This wealth of livestock has already contributed towards better living of the human beings. However, recent research in the field of developing dairy cows, that resist a wide spread bacterial infection called mastitis through use of gene transfer technology is note worthy.

Transgenic Livestock :

Transgenic animals are being developed and used as bioreactors for the production of recombinant proteins that have pharmaceutical applications. The molecular genetic methodologies of milk borne animal farming and application of nuclear transfer to animal cloning have renewed economic interest in this field.

Prospects for Development of Fisheries in Gujarat :

The state of Gujarat has immense potential for development of fisheries and allied activities, due to availability of natural water resources in inland, brackish waters and marine water. For the development of fisheries sector, the primary need is qualified and research oriented skilled manpower, so that new technologies developed could be implemented in a scientific and logistic way. The Government of Gujarat had taken the decision to establish a College of Fisheries at Veraval in the year 1991-92 to generate qualified manpower. It is worthy to mention here

that since, 1994 and onwards the students graduated from the College of Fisheries are engaged in development of Fisheries sector in State Government, University & Private industries. The state has tremendous prospect to increase the fish production and allied activities by exploring natural resources with environment friendly approaches.

Future of the Country:

The future of any nation lies in the hands of its young ones and the institutions which shape them. You, the young graduates of today are now battle ready to enter the arena. Whether you join public sector or the private sector, the challenge before both the groups is immense. You have to increase the productivity and production of quality materials so that the products can first meet the national aspirations and compete with the imported products, which are often sold in Indian market at cheaper rates because these enjoy very high levels of subsidy well beyond what the Indian farmer and consumer can ever get. We have to be and must become competitive in international market. It is a big challenge that you young graduates have to face and this is a much bigger challenge that researchers and farmers of my generation had to face while ushering the green revolution.

I wish you a prosperous career and all success in your efforts.

“JAI HIND-JAI KISHAN”