

Organizational Structure:

The Director of Agricultural Experiment Station is assisted by one Joint Director Research, two Associate Directors and two Assistant Directors of Research. The Associate Directors of Research at the zonal level are responsible for the research activities in their respective zone. Apart from the regular on-going research activities funded by ICAR, the Associate Directors of Research have the responsibility of identifying the problems of agriculture pertaining to different zones, prioritizing the research needs, formulate and review/renew the technical programmes of the scientists working in the zone to achieve the identified mandates. In addition, the ADRs also have the responsibility of motivating scientists to develop research proposals for external funding to meet the research gaps. They also have the responsibility of coordinating the linkages of the University with the line departments of the districts coming under the area jurisdiction.

Rabi Cereals

Wheat research centre Kanpur is one of the oldest initiatives in India. Research work on wheat improvement was started with the establishment of the unit of Economic Botanist, Rabi Cereals in 1904 which was the first post of economic Botanist in the country. It provided sound base for systematic research on wheat. Research

work on crop breeding was started in 1904 by Dr. H.K. Leak first Economic botanist in U.P. Wheat variety C-13 and C-46 were developed during 1916 and 1920, respectively. Wheat variety K-68 developed in 1963 and K-65 during 1964 were the most popular traditional tall varieties before the introduction of high yielding dwarf Mexican wheat varieties in India. These varieties are well known for their attractive grain colour and chapatti making quality. Now these varieties are no more in cultivation and being good donor for quality are widely used in wheat breeding programmes in India for improvement of grain quality.



This centre awarded further momentum with sanction of breeding for rust resistance in wheat in 1956. Later on, to strengthen the ongoing programme an All India coordinate Wheat and Barley improvement project (AICWBIP) was sanctioned by ICAR New Delhi in 1971. This centre is has developed a climate smart variety *Halana*, which has high terminal heat-stress escape mechanism. CSA University is also have credited with develop of an internationally acclaimed wheat varieties K-9107(*Deva*), adopted by Bangladesh for large scale cultivation and K-9006 (*Ujijar*) used by Nepal and released as *Achutya*. Since then this centre has developed 42 wheat & 32 barley varieties till date for general cultivation under different agro-climatic conditions.

Kanpur is one of the oldest centres in the country for barley crop. This centre has developed 21 varieties for different agro-climatic zones i.e. for saline-alkaline, malt and breweries (K-551 and K-508), huskless (Geetanjali and K-1155), feed and fodder purpose and diara land conditions (K-560, Lakhan, K-141 and Geetanjali). Geetanjali (K-1149) variety gives the highest malt yield and enjoys the top position in India. It gives 90% of the malt and 8% protein. Azad (K-125) is suitable for saline-

alkaline soils of UP, Bihar and West Bengal. This variety is being used as a national check in All India Coordinated trials. Manjula (K-329) a tall and early maturing

Vegetable Section, Kalyanpur

State Government was established a research unit for the improvement of vegetable crops at Alambagh, Lucknow in 1951. Thereafter in 1954, this unit was shifted from Lucknow to Kalyanpur, Kanpur under the supervision and administrative control of Late Dr. Y.R. Mehta, Horticulturist.



Subsequently in the year 1962, the vegetable research unit was strengthened with the creation of a post of Economic Botanist (Vegetables). During 1971-72, two sub centres of All India Coordinated Vegetable Improvement Project (AICVIP) and All India Coordinated Research Project on Potato (AICRP on Potato) were sanctioned by the ICAR. Thereafter, in 1981-82, Government of India was also sanctioned a project on "Breeder Seed Production of Vegetable crops" to this centre. All India network project on Onion and Garlic was also sanctioned in 2007 to cater the research need of these spices crops. Presently, 03 All India Coordinated / Network Research Projects and 01 Seed Spices Development Scheme are running in this section to facilitate the research work.

This centre is has developed an early group of vegetable pea variety *Azad P-3*, adopted by several states i.e. Uttar Pradesh, Haryana, Punjab, Madhya Pradesh, Uttarakhand, Bihar etc. In Uttar Pradesh, this variety has covered more than 70% area of early group of vegetable pea. Since the inception of this centre, 58 varieties and more than 80 agro techniques of different vegetable crops have been developed for the cultivation of different agro climatic conditions.

Oilseed section

The All India Coordinated Project on Oilseeds-Rapeseed and Mustard was sanctioned to do multidisciplinary research for developing early maturing, high yielding varieties with high oil content and resistance / tolerance against pest and diseases besides standardization and production and protection technologies for this region. Linseed varieties like T-1, T-477, T-126, T-603, T-397, Mukta, Hira, Neelam, Garima, Sweta, Shubhra, Luxmi-27, Padmini, Sheela, Shekhar, Sharda, , Gaurav, Shikha, Rashmi, Parvati, Ruchi, Mau Azad Alsi-1 and Mau Azad Alsi -2, Uma (LCK1101), Indu (LCK1108), Rajan (LCK -1009), Surya (LCK-1404), Anu and Aparna are some of the important ones have been developed, which are wilt and rust resistant and are short duration. T9, & Bhawani (TK841) of Toria; K88, T.151 (YST. 151) Pitambri (RYSK-05-02) of yellow sarson and Varuna (T59),Vardan, Urvasi, Vaibhav, Rohini, Maya, Kanti, Basanti and Ashirwad of Indian Mustard, T-4, T-12, T-13, T-15, Shekhar, Tarun & Pragati of sesame; T-3, Kalpi-1, Chandraprabha and Baliya Chayan of castor and Type-64, Chandra, Chitra, Kaushal, MA-16, Amber, Prakash, TG-37A, Utkarsh, Avtar and Divya of groundnut. These are especially meant for the area jurisdiction of the University. Other salient features are given below-

- Credited with many achievements by releasing a large number of acceptable varieties specific to this region.
- Some of them are Mustard varieties **T-59** (Varuna) for entire country, **Rohini**, a zonal check variety (Zone III) for whole UP, **Vardan**, a national check variety in late sown, **Vaibhav**, in rainfed condition, Pitambari for yellow saron and **Urvashi** for whole UP and Toria variety **Bhawani** (a zonal check variety). Shekhar, Tarun & Pragati of sesame and Chandra, Chitra, Kaushal, Amber, Prakash, TG-37A, Utkarsh and Divya of groundnut

Legume Section:

This section is running a state-financed scheme, "Dal Yojna". This is the oldest and premier pulse improvement centre in the country. Outstanding varieties like T 21, T 7 and T 17 of Arhar; T 9, T-44, K 851, (KM - 2241 (Sweta) & KM - 2195 (Swati) of Mung; T-4, T-5, T-1, T-2, T-3, Radhey, K-468, K-850, Avarodhi, Udai(KPG-59), Pragati (K-3256), (Kabuli) KWR 108, KGD- 1168 (Alok) of Chickpea; T 163 of Pea and T 36, KLB – 303 (Shekhar 2) and KL - 320 (Shekhar 3) Mallika of Lentil were developed. Besides, Avarodhi and KWR 108 (rust resistant), KGD 1168 (wilt resistant) of chickpea; Rachna, Shikha, Swati Sapna (powdery mildew resistant), KPMR 400 (Indra), and KPMR 522(Jay) of pea; Amar (erect) and Azad (sterility mosaic resistant) of arhar; Shekhar-1, Shekhar-2, Shekhar-3, and Azad Urd-1 Azad Urd-2 Azad Urd-3 Azad Urd-4 (yellow mosaic resistant) of urd are some of the resistant varieties.

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Regional Research Stations

Regional Research Station, Daleep Nagar, Kanpur Nagar: During 8th decade a massive programme of National Agricultural Research Project was launched with the view to strengthening the Regional Research Capabilities of SAU's based on agro-climatic zones. Regional Research Station, Daleep Nagar came in to existence during NARP Phase-II in April, 1989 to carry out the researches on Rice, Jower, Bajra, Maize in *Kharif* & Wheat, Barley, and Mustard in Rabi along with the important vegetable of the area like Tomato. Onion and Garlic pertaining their suitability and sustained production in the salt effected soil of the region. Centre also aims at reclamation, management and utilization of such problematic soils through the agronomic Practices like crop rotation, mixed cropping, inter cropping, nutrient management etc.



Regional Research Station, Kalai (Aligarh): Initially, Regional research Station to cater the research needs of south western semi-arid zone of U.P., was established in 1984 at Madhurikund (Mathura) under NARP phase I to cater researches on Brackish water, a major problem of the zone and use or management of such water for irrigation is the basic need of the farmer which was later on shifted to Kalai (Aligarh) in 2003 due to transfer of research farm to Veterinary University Mathura. The council has also sanctioned an on Farm Water Management research sub station at Kalai (Aligarh) under Upper Ganga Modernization Project with a total outlay of Rs. 33.68 lakh with the prime objective to increase water use efficiency by different crops in the canal irrigated area by Harduaganj distributaries in Aligarh district in 1989 under NARP phase II. An area of about 45 acres from Kalai farm has been transferred to the University to undertake researches on scientific irrigation management technologies for different crops.



Regional Research Sub Station, Hazratpur (Firozabad): Research Sub Station Hazratpur (Firozabad) was established in June 1977 with mandate of development of ravines management technologies and soil water conservation. It was further strengthened as NARP Research Sub Station during 1989-90 to cater location specific need for farmers of district Firozabad. The area of research farm is 43.5 ha uncultivable, undulating nature, calcareous soil with shallow ravines scattered in four villages.

Regional Research Sub Station, Mainpuri: Initially Crop Research Station Mainpuri was established to cater need of production of groundnut crops. During 1984-85 it was further strengthened as Regional Research Sub Station with mandate to generate groundnut production technologies and verification trials on cereals, oilseeds and pulse crops.



Regional Research Sub Station, Saini (Kausambi): Research sub Station, Saini (Kausambi) was established in 1989 under financial assistance of ICAR to undertake the researches on verification functions for wheat (aestivum), rice, rapeseed and mustard, groundnut, linseed, toria, sunflower and pulses etc.



Research Units

1. Paddy Research Unit

A cooperating centre under the All India Coordinated Rice Improvement Project was sanctioned to CSAUA&T, Kanpur during Xth plan period (2002 - 2007) by Indian Council of Agricultural Research, New Delhi which became operational w.e.f. April 2005 for the development of rice varieties and production technologies for alkaline and inland sodic soils to enhance the productivity of more than 12.0 lakh ha salt affected area. More than 50 % area of saline and alkaline soils of the state is confined in University area jurisdiction. Besides this, the development of varieties for irrigated ecology, aromatic and aerobic rice are also in our priority.

2. Sorghum Research Unit

Sorghum is grown under rainfed condition. Since start-up of sorghum project following major jowar varieties have been developed for general cultivation in state and at national level viz: Mau Type-1, Mau Type-2, Versa, Vijayeta and Bundela. Besides these high yielding varieties several local collections were also collected from Bundelkhand region of state. Two promising genotypes namely Acc. no. MASC-5/02 locally known as "Pola" for high protein content (14.43%) and Acc. No. MASC-1/2002 with scented and suitable for "Kui" a local preparation notable.

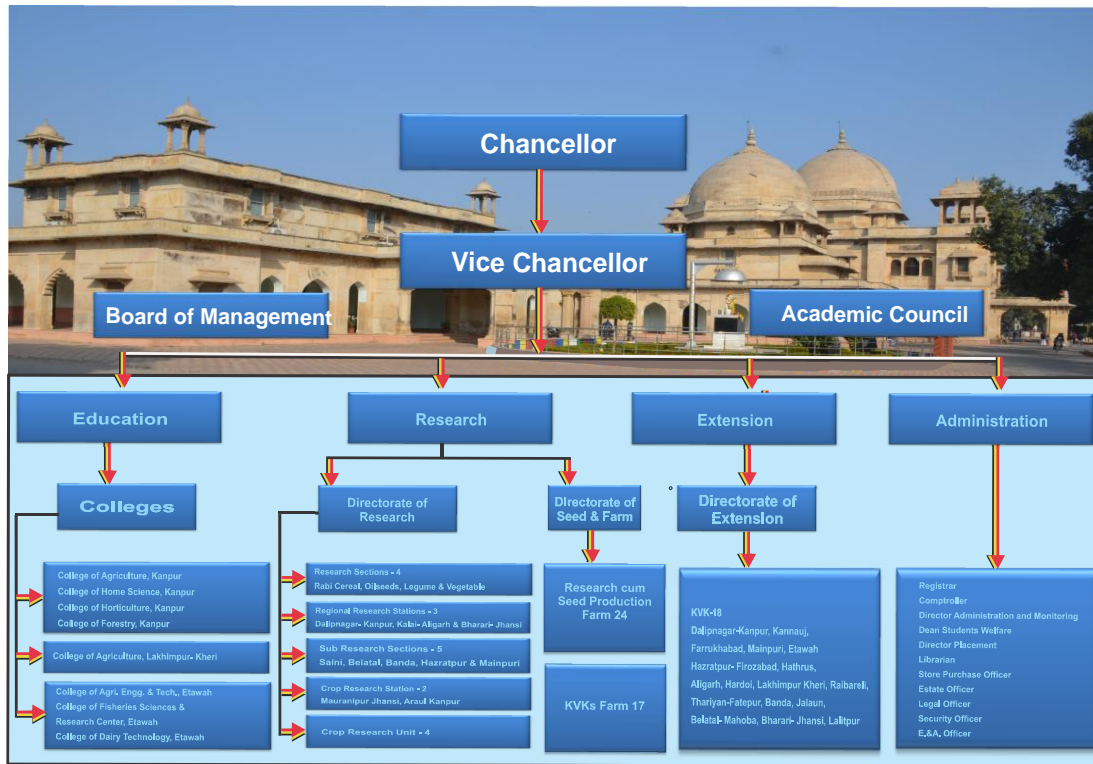
3. Cotton Research Unit

The research work on cotton improvement at Kanpur was started in 1971, after that it was strengthened with the sanction of All India Coordinated Cotton Improvement Project in the year 1984 by the Indian Council of Agriculture Research, New Delhi with the objectives to develop the new cotton varieties and agro techniques for improvement of cotton in North India especially for U.P. Kanpur is a sub centre for cotton research.

4. Tobacco Research Unit

All India Network Project on Tobacco (AINPT) centre was sanctioned by ICAR-CTRI during seventh plan with an objective for conducting the location specific research on chewing and hookah type tobacco under the administrative control of University, which started functioning from 1988-89 at Saraimira then shifted to Araul Kanpur in 2004. Since then University has developed Patiyali, Kaliponia, Azad Kanchaw and ArR-2).

Organogram



Productivity Constrains and area of Research:

The area jurisdiction of University spread over in two zones of State of Uttar Pradesh viz; South Western Sem-arid Zone and Central Plain Zone and working for enhancement of the agricultural and socio-economic development of the regions. The agriculture productivity constraints of both the zone are depicted as below:



South- Western Semi Arid Zone

- Problem of brackish water in Mathura, Agra and Aligarh districts.
- Problem of salinity/alkalinity in all districts of the zone.
- Depletion in ground water in all districts of the zone.
- Emerging deficiency of secondary nutrients and depletion of organic carbon in soils.
- Diseases like *Alternaria* blight, white rust and aphid in mustard, powdery mildew in pea, wilt in gram and pigeon pea, late and early blight and black scurf in potato, problem of bud necrosis in groundnut and pest attack in cotton are the serious problems of the zone.
- Severe incidence of insect, pests & diseases and complex problems in crops.
- Non availability of quality seed of high yielding varieties. 8. Lack of varieties of falsa, ber, bel, aonla and citrus and suitable agro-techniques.
- Epidemics, parasitic infestation, malnutrition, delay in puberty in buffalo & goat, brucellosis, anoestrous and mastitis in buffaloes and higher calf mortality.
- Lack of farming system modules for ravines.
- Slow pace of technology flow towards end users.

Central Plain Zone

- Depletion in ground water in all districts of the zone.
- Emerging deficiency of secondary nutrients and depletion in organic carbon in soils.
- Powdery mildew in pea, wilt in gram and pigeonpea, *Alternaria* blight, white rust and aphid in mustard, yellow mosaic in green gram and black gram, late and early blight and black scurf in potato are the serious problems of the zone.
- Severe incidence of insect, pests & diseases and complex problems in crops.
- Incidence of nematodes is an emerging problem in crops.
- Lack of climate resilient varieties of paddy, wheat, barley, mustard, chickpea, fieldpea, pigeon pea.
- Non availability of quality seed of high yielding varieties.
- Alternate bearing, fruit dropping, mealy bugs in mango and fruit fly and wilt in guava.
- Heavy fruit dropping in aonla.
- Stem and fruit bores in brinjal and tomato.
- Epidemics, parasitic infestation, malnutrition, delay in puberty in buffalo & goat, brucellosis, anoestrous and mastitis in buffaloes and higher calf mortality

- Unavailability of quality fingerlings, malnutrition, low production potential, higher fingerlings mortality and low maintenance of water bodies in fisheries.
- Slow pace of technology flow towards end users.