College of Horticulture and Forestry at A Glance

College of Horticulture and Forestry

Acharya Narendra Deva University of Agriculture and Technology
Kumarganj, Ayodhya-224229 (UP) India

About College

The College of Horticulture and Forestry was established on 11th December 2009. It was inaugurated by Hon'ble Vice-Chancellor Dr. Basant Ram, of the University and first Dean Dr. B.P. Singh, of the college. It is situated at a prime location of the University in the front of the administrative block of the University campus in an area of about 2 hectares under the college campus. The six departments i.e. Fruit Science, Vegetable Science, Ornamental Horticulture, Post-Harvest Technology, Agroforestry, and Medicinal and Aromatic Plants were shifted into the new college building on 11th December 2009. Before the establishment of the College of Horticulture and Forestry, the name of the Department of Horticulture was initiated in the year 1977 at the Crop Research Station (CRS) Mashodha, Ayodhya later it was shifted to the main campus of the University at Kumarganj, Ayodhya in 1982.

The five disciplines *viz*. Fruit Science, Vegetable Science, Ornamental Horticulture, Post-Harvest Technology, and Medicinal and Aromatic Plants were included in the Department of Horticulture. Later on, in the year 1981, a separate Department of Vegetable Science was established. After that, the Department of Forestry was started during the year 1987-88 in the College of Agriculture, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya. Later on, the name of the department was changed to the Department of Silviculture and Agroforestry in 2020. The geographical and climatic conditions are quite congenial for the production of horticultural crops and forestry timber trees. In the year 1980, the first orchards of Aonla, Bael, Ber, Grapes, Mango, Guava, Banana and different minor fruits were established in alkaline/ sodic soil after reclamation. There were established four different experimental farms *viz.* Farm-1: 300-hectare land at Akma, Farm-2: 100-hectare land at Govind Nagar, Farm-3: 25-hectare land, and Farm-4: 20-hectare land in the main campus.

Vision

- ✓ To establish a premier institute in Horticulture and Forestry dedicated to producing skilled professionals equipped to meet the evolving demands of technology, education, industry, and stakeholders

Mission

- ✓ To provide innovative teaching, research, training and demonstration in all areas of Horticulture and Forestry to impart professionalism and scientific acumen and to generate technologies for improving the quality production & productivity of Horticulture and Forestry crops

Objectives:

- ✓ To provide a teaching environment and facilities for developing human resources capable of meeting the challenges in Horticulture & Forestry
- ✓ To develop climate-resilient varieties in Horticulture & Forestry
- ✓ To offer comprehensive technical and practical exposure in Horticulture and Forestry for skill development in production, value addition, management, marketing, and self-employment

- ✓ Establishment of Hi-tech nursery of fruits, vegetable, ornamental, forest trees, medicinal and aromatic crops and sell to research institutes, farmers and other stakeholders.
- ✓ To enhance the aesthetic appeal and functionality of the university campus through Landscaping and Beautification
- ✓ To collaborate with National and International Institutes/Agencies involved in teaching, research and developmental programs in Horticulture & Forestry

Departments-06

1. Department of Fruit Science
2. Department of Vegetable Science
3. Department of Floriculture and Landscaping
4. Department of Post-Harvest Management
5. Department of Silviculture and Agroforestry
6. Department of Medicinal and Aromatic Plants

Number of Faculties since 2017-18

Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Regular Faculty	19	18	17	16	14	27	28
Guest Faculty	01	01	01	04	05	-	01
Interdisciplinary	21	22	20	22	19	21	23

Present Faculty details:

Sr. No.	Name	Designation	Year of Experience	Publications
1.	Dr. Sanjay Pathak	Dean	35	42
2.	Dr. Bhagwan Deen	Professor	28	18
3.	Dr. Bhanu Pratap	Professor	22	72
4.	Dr. H.K. Singh	Professor	20	41
5.	Dr. C.N. Ram	Professor	20	130
6.	Dr. S.K. Verma	Associate Professor	22	16
7.	Dr. Pradip Kumar	Associate Professor	16	85
8.	Dr. Santosh K. Verma	Associate Professor	15	40
9.	Dr. R.S. Mishra	Assistant Professor	27	21
10.	Dr. U.Y. Nitin	Assistant Professor	9	45
11.	Dr. Aastik Jha	Assistant Professor	8	113
12.	Dr. Anil Kumar	Assistant Professor	6	46
13.	Dr. Ashish Kumar Singh	Assistant Professor	3	56
14.	Dr. Jagveer Singh	Assistant Professor	3	34
15.	Dr. Atul Yadav	Assistant Professor	2	22
16.	Dr. Kuldeep Pandey	Assistant Professor	2	10
17.	Dr. Niranjan Singh	Assistant Professor	7	57
18.	Dr. Devendra Kumar	Assistant Professor	8	20

19.	Dr. Anjali Tiwari	Assistant Professor	9	18
20.	Dr. Shayma Parveen	Assistant Professor	13	24
21.	Dr. Sunil Kumar	Assistant Professor	6	18
22.	Dr. Hitesh Kumar	Assistant Professor	4	15
23.	Dr. D.K. Upadhyay	Assistant Professor	12	45
24.	Dr. Sanjeev Singh	Assistant Professor	2	45
25.	Dr. Pradeep Kr. Dalal	Assistant Professor	1	28
26.	Dr. Manoj Kumar Maurya	Assistant Professor	1	20

Total number of students in the College since 2017-18:

Student Enrolled	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Ph.D.	21	23	30	37	43	45	50
M.Sc.	42	43	47	51	57	82	115
B.Sc.	192	174	165	167	188	248	300

Students-Teacher Ratio of the college since 2017-18:

Degree Program	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Ph.D.	1:1	1:1	2:1	2:1	2:1	2:1	2:1
M.Sc.	2:1	2:1	3:1	2:1	3:1	3:1	4:1
B.Sc.	5:1	4:1	4:1	4:1	5:1	5:1	6:1

Teaching:

A strong graduate and postgraduate teaching program offers a wider choice to select the subject. Admission to Bachelor's, Master's, and Doctorate programs, the entrance exam is made through the Uttar Pradesh Combined Agriculture and Technology Entrance Test (UPCATET) by Agriculture Universities of Uttar Pradesh and 15 % for UG and 25 % for PG and PhD programs are filled by the throughout the country and foreign students through ICAR quota seats. The education is offered through English medium, under the semester system with a 10-point scale for evaluation. The courses offered for UG, PG, and PhD. degree programs are based on the Fifth Deans' Committee. This includes Experiential Learning Programmes (ELP) and Rural Agricultural Work Experience (RAWE) for the last two semesters of UG students. Apart from the program's theory and practical for different courses, some innovative programs are also introduced to expose the students to real farming and farmers' conditions.

Degree programmes offered by the College of Horticulture and Forestry:

Sr. No.	Offered Degree programmes	Degree programmes	Duration (Year)
1.	College of Horticulture and Forestry	B.Sc. (Hons.) Horticulture	**4**
2.	Department of Fruit Science	M.Sc. (Hort.) Fruit Science	**2**
		Ph.D. (Hort.) Fruit Science	**3**
3.	Department of Vegetable Science	M.Sc. (Hort.) Vegetable Science	**2**
		Ph.D. (Hort.) Vegetable Science	**3**

4.	Department of Silviculture and Agroforestry	M.Sc. (Forestry) Silviculture and Agroforestry	**2**
		Ph.D. (Forestry) Silviculture and Agroforestry	**3**
5.	Department of Floriculture and Landscaping	M.Sc. (Hort.) Floriculture and Landscaping	**2**
6.	Department of Post-Harvest Management	M. Sc. (Hort.) Post Harvest Management	**2**

Course details for B.Sc. (Hons.) Horticulture degree programme as per Vth Dean's Committee:

Sr. No.	Total Courses	Courses	Credits House
1.	06 Disciplinary Curses	24	64 (38+26)
2.	17 Interdisciplinary Courses (16 COA and 01 MCAET)	34	74 (44+30)
3.	Non-Credit Course	02	02 (0+2)
4.	Student Ready (ELP and RAWE)	02	40 (0+40)
5.	**Total number of Courses and Credit Hours**	**62**	**180 (82+98)**

Course structure for P.G and Ph.D. degree programme as per Vth Dean's Committee:

Sr. No.	Course Work	Masters' Programme (Credit Hours)	Doctoral Programme (Credit Hours)
1.	Major Courses	20	12
2.	Minor Courses	08	06
3.	Supporting Course (s)	06	05
4.	Common Compulsory Courses	05	-
5.	Seminar	01	02
6.	Comprehensive Exam	Non-Credit Course	Non-Credit Course
7.	Thesis/ Research	30	75
8.	**Total Credit Hours**	**70**	**100**

Facilities:

The College has smart classrooms, seminar halls, well-equipped laboratories, a library, and three Main Experiment Station (MES) Horticulture for research propose. The Central Library of the University houses exhaustive literature besides international abstracting services with CD-ROM and Internet facilities etc. Besides Human Resources Development, the college also helps in the personality development of students through the units of National Cadet Corps and National Service Scheme. The system of student counseling is operating to guide them in obtaining higher studies and examinations, fellowship as well as employment through Placement Cell and self-entrepreneur. The pleasant and intellectually stimulating environment with well-furnished hostels and well-equipped gymnasium for boys and girls as well as a well-maintained sports ground provides an exciting experience at the campus.

Research

Multi-disciplinary research of applied nature is conducted in Natural Resource Management, Crop Diversification, Crop Improvement, Crop Protection, and Advanced Production Technologies complemented by horticultural studies *viz.* Fruit Science, Vegetable Science, Floriculture and Landscaping, Post-Harvest Management and Silviculture and Agroforestry, and other disciplines of the College of Agriculture.

AICRPs

Six All India Coordinated Research Projects are also running in the four different departments namely AICRP on vegetable crops, AICRP on Potato and AICRP on Spices, AICRP on Arid Fruit Crops, AICRP on Medicinal and Aromatic Plants and AICRP on Agroforestry. University recognized as sub-center under AICRP (Vegetable crops) in 1980 has initiated work on crop improvement, production including seed production and crop protection technologies. The important crops covered are brinjal, chilli, tomato, cauliflower, French bean, peas, okra, cucumber, bottle gourd and some other cucurbits. AICRP on Arid Fruits started in 1982 for the standardization of agro-techniques and varieties through survey, collection, and evaluation of germplasm aonla, bael, ber, and jamun with special reference to alkaline soil conditions. AICRP on Medicinal and Aromatic Plants started in 1980 for the production technology and varieties for medicinal and aromatic plants. AICRP on Potato started in year 1985 for improvement, production and protection technologies. AICRP on Agroforestry started in 1987-88 to develop agroforestry techniques for increasing land productivity and promoting agroforestry development in the eastern parts of the Uttar Pradesh. AICRP on spices started in year 1996 for improvement, production and protection technologies which covers ginger, turmeric, coriander, cumin, fennel, fenugreek and ajwain. Till today 52 high-yielding varieties of different vegetable crops, 18 varieties of fruit crops 3 varieties of medicinal and aromatic plants and 10 spices Crops have been developed and released for general cultivation by State/Central Variety Release Committee. Besides this, more than 47 different recommendations have been made on production technology and plant protection technologies for the benefit of farmers in the State. To popularize the cultivation of varieties and technologies in the state as well as national level for quality fruits, vegetables, seed production and agroforestry models through development programmes like technology transfer through FLDs, seminar/ workshops and farmers training are also being. Following are some major research achievements**:**

Developed Varieties:

The different departments have successfully developed 83 high-yielding varieties of fruit crops-18, vegetable crops-52, spice crops-10, and medicinal and aromatic plant crops-03 varieties/hybrids varieties. The germplasms details are given below

Sr. No.	**Crops**	**Number of varieties/Hybrid**	**Sr. No.**	**Crops**	**Number of varieties/Hybrid**
Vegetable Crops (52)			**Fruit Crops (18)**		
1.	Bottle gourd	12	**15.**	Aonla	07
2.	Tomato	08	**16.**	Bael	09

3.	Garden Pea	06	**17.**	Ber	02
4.	Pumpkin	04	**Spices (11)**		
5.	Brinjal	04	**18.**	Turmeric	05
6.	Pointed gourd	03	**19.**	Fenugreek	03
7.	Colocasia (Arvi)	03	**20.**	Coriander	02
8.	Elephant Foot Yam	02	**21.**	Fennel	01
9.	Banda (*Alocasia* Sps.)	02	**Medicinal and Aromatic Plants (03)**		
10.	Cowpea	02	**22.**	Opium Poppy	01
11.	Muskmelon	02	**23.**	Lemongrass	01
12.	Sweet Potato	02	**24.**	Mandookparni	01
13.	Bitter gourd	01			
14.	Okra	01			

Crop wise details of developed varieties:

Vegetable Crops		**Year**			**Year**
Sr. No.	**Crops**		**Sr. No.**	**Crops**	
1.	**Bottle gourd (*Lagenaria siceraria*)**		**8.**	**Tomato (*Solanum lycopersicum L.)***	
	1. Narendra Shishir (NDBG-202)	**2001**		**1.** Narendra Tomato-1	**1996**
	2. Narendra Rashmi (NDBG-1)	**2001**		**2.** Narendra Tomato-2 (NDT-120)	**1999**
	3. Narendra Hybrid-4	**2004**		**3.** Narendra Tomato-5 (NDT-96)	**2001**
	4. Narendra Dharidar (NDBG-802-1)	**2004**		**4.** Narendra Tomato-6 (NDT-4)	**2001**
	5. NDBG-132	**2004**		**5.** Narendra Tomato-3 (NDT-3)	**2005**
	6. Narendra Jyoti (NDBG-104)	**2005**		**6.** Narendra Tomato-4 (NDT-9)	**2005**
	7. Narendra Madhuri (NDBG-505)	**2007**		**7.** Narendra Tomato-7 (NDTS2001-3)	**2007**
	8. Narendra Shivani (NDBG-403)	**2007**		**8.** Narendra Tomato-8 (NDTVR-60)	**2007**
	9. NDBG-132	**2009**	**9.**	**Brinjal (*Solanum melongena*)**	
	10. Narendra Pooja (NDBG-10)	**2013**		**1.** Narendra Brinjal-1 (NDB-25)	**1996**
	11. Narendra Kamna (NDBG-16)	**2018**		**2.** Narendra Hybrid Brinjal-3 (NDBH-8)	**1999**
	12. Narendra Sita (NDBG-14-10)	**2021**		**3.** Narendra Brinjal-2	**2005**
2.	**Pumpkin (*Cucurbita pepo*)**			**4.** Narendra Suyog (Narendra White Brinjal-1)	**2021**
	1. Narendra Agrim (NDPK-24)	**2004**	**10.**	**Cowpea (*Vigna unguiculata L.*)**	
	2. Narendra Amrit (NDPK-130)	**2004**		**1.** Narendra Lobia-1 (NDCP-13)	**1996**
	3. Narendra Abhooshan (NDPKH-1)	**2005**		**2.** Narendra Lobia-2 (Sel-2-1)	**2005**
	4. Narendra Upcar	**2007**	**11.**	**Vegetable Pea (*Pisum sativum var. hortanse)***	
3.	**Pointed Gourd (*Trichosanthes dioica* Roxb.)**			**1.** Narendra Sabji Matar-1	**1996**
	1. Narendra Parwal-260	**2001**		**2.** Narendra Sabji Matar-2 (NDVP-8)	**1998**
	2. Narendra Parwal-307	**2001**		**3.** Narendra Sabji Matar-3 (NDVP-10)	**1999**

	3 Narendra Parwal-604	**2001**		**4.** Narendra Sabji Matar-4 (NDVP-9)	**2001**
4.	**Bitter Gourd (*Momordica charantia* L.)**			**5.** Narendra Sabji Matar-5 (NDVP-250)	**2006**
	1. Narendra Karela Baramasi-1	**2007**		**6.** Narendra Sabji Matar-6 (NDVP-12)	**2006**
5.	**Muskmelon (*Cucumis melo*)**		**12.**	**Okra (*Abelmoschus esculentus*)**	
	1. Narendra Muskmelon-1 (NDM-2)	**1998**		**1.** Narendra Bhindi-1 (NDO-10)	**2005**
	2. Narendra Muskmelon-2 (NDM-15)	**2005**	**13.**	**Colocasia-** ***Colocasia esculenta*** **(L.) (Arvi)**	
6.	**Banda (*Alocasia* Sps.)**			**1.** Narendra Arvi-1	**1999**
	1 Narendra Banda-1	**1999**		**2.** Narendra Arvi-2	**1999**
	2 Narendra Banda-2	**2001**		**3.** PKS-1	**2001**
7.	**Sweet Potato- (*Ipomoea batatas L. Lam*.)**		**14.**	**Elephant Foot Yam (*Amorphophallus paeoniifolius*)**	
	1. Narendra Shakarkand-1	**2001**		**1.** Narendra Zimikand-5 (NDA-5)	**2001**
	2. Narendra Shakarkand-10 (NDSP-10)	**2003**		**2.** Narendra Zimikand-9 (NDA-9)	**2001**
		Fruit Crops (18)			
15.	**Aonla (*Emblica officinalis* Gaertn.)**		**17.**	**Bael (*Aegle marmelos* Correa)**	
	1. Narendra Aonla-4	**1987**		**1.** Narendra Bael-4	**1992**
	2. Narendra Aonla-5	**1987**		**2.** Narendra Bael-5	**1992**
	3. Narendra Aonla-7	**1989**		**3.** Narendra Bael-7	**1992**
	4. Narendra Aonla-6	**1993**		**4.** Narendra Bael-9	**1992**
	5. Narendra Aonla-10	**1995**		**5.** Narendra Bael-16	**2006**
	6. Narendra Aonla-25	**2021**		**6.** Narendra Bael-17	**2006**
	7. Narendra Aonla-26	**2021**		**7.** Narendra Bael-8	**2022**
16.	**Ber (*Ziziphus mauriticzna* Lam)**			**8.** Narendra Bael-10	**2022**
	1. Narendra Ber Selection -1	**2006**		**9.** Narendra Bael-11	**2021**
	2. Narendra Ber Selection -2	**2006**			
		Spices Crops (10)			
18.	**Turmeric (*Curcuma longa*)**		**20.**	**Fenugreek (*Trigonella foenum-graecum*)**	
	1. Narendra Haldi-1	**2007**		**1**. Narendra Methi-1 (NDM-19)	**2014**
	2. Narendra Haldi-2	**2012**		**2.** Narendra Methi-2 (NDM-69)	**2015**
	3. Narendra Haldi-98 (NDH-98)	**2017**		**3**. Narendra Richa (NDM-79)	**2018**
	4. Narendra Saryu (NDH-8)	**2017**	**21.**	**Fennel (*Foeniculum vulgare* Mill.)**	
19.	**Coriander (*Coriandrum sativum*)**			**1.** Narendra Sauf-1	**2014**
	1. Narendra Dhania-1 (ND Cor-2)	**2011**			
	2. Narendra Dhania-2	**2014**			
		Medicinal and Aromatic Plants (03)			
22.	**Opium Poppy (*Papaver somniferum* L.)**		**24.**	**Mandukaparni (*Centella asiatica* L.)**	
	1. Kirtiman	**1992**		**1.** Vallabh Medha	**1999**
23.	**Lemongrass (*Cymbopogon citratus)***				
	1. NLG-84	**2006**			

Developed production technologies:

Due emphasis has also been accorded to standardizing the production and protection technologies in different horticultural crops. Around fifteen agro-techniques have been standardized for vegetable cultivation including agro-techniques for improved cultivation practices, plant protection technology, and seed production. The technologies developed by the department are being popularized among farmers through training & demonstrations. These technologies have been mentioned below.

Sr. No.	Name of Crop	Developed Production Technologies in the College of Horticulture and Forestry	Year
1.	**Aonla**	Cultivars Chakaiya, NA-7, NA-6, NA-10, NA-4 and NA-5 can be grown in sodic and saline soils up to 45.5ESP and 10.0dSm-1ECe., respectively.	1990-91
2.	**Ber**	Seedlings are more tolerant than budded plants. Among Cvs. Banarasi Karaka is more tolerant than Cvs. Gola	1990-91
3.	**Bael**	Cultivars NB-5, NB-9 and NB-17 can be grown successfully in sodic soil upto 30 ESP and saline soil up to5.0 dSm-1ECe.	1990-91
4.	**Aonla**	15th June to 30th August budding is best time for aonla plant multiplication for cent per cent bud ling success and budging growth.	1997-98
5.	**Bael**	Bael and Aonla can be multiplied by patch or modified ring method of budding during June –July with 85-90 percent success.	1997-98
6.	**Ber**	Bud lings can be raised in polythene tubes (25 cm × 15 cm size). Patch budding of defoliated seedlings of 90-100 days old in July gave best results.	1997-98
7.	**Aonla**	The pre-harvest spray of mancozeb (0.3%) thrice at 15 day intervals from mid of September gave excellent response to check the disease.	1998-99
8.	**Aonla**	Pre-harvest spray of Calcium nitrate (1%) Topsin (0.1%) twice i.e. 20 and 10 days before harvesting, increased shelf life, reduced weight loss, and decay loss, and maintaining the quality of fruit up to 20 days at ambient storage.	1998-99
9.	**Aonla**	Standardization of planting method system for '*Usar'* and '*Wasteland*' through the pit size 1 cubic meter, breaking of kankar pan after that pit filling mixture of 30 KG FYM, 20 Kg Sand and 6-8 Kg Gypsum.	1991-92
10.	**Ber**	Scion of Ber cv. Gola and Umran have been recommended for compact plant structure, fruit yield, and quality attributes on rootstock *Z. mauritiana var.* Sukhwani and var. Tikadi	2002-03
11.	**Aonla**	Foliar spray of ZnSO4 (0.5%) and CuSO4 (0.4%) Borax (0.3%) during the last week of April and September months reduced fruit necrosis, and improved plant growth and quality of fruits.	2002-03
12.	**Aonla**	Fertilizer dose with a combination of 50% NPK (500g N, 250g P, 500g K +25g) + 250g each (Biofertilizer + FYM) per plant per year for 10 year and above old plants is recommended for commercial cultivation of aonla in Uttar Pradesh.	2002-03
13.	**Bael**	Cultivars NB-5, NB-9, and NB-17 can be grown successfully in sodic soil up to 30 ESP and saline soil up to 5.0 dSm-1ECe.	2002-03
14.	**Phalsa**	In phalsa results reveal that pruning 50 cm above the ground level produced large fruit sizes with maximum juice content better juice quality and the highest fruit yield.	2007-08
15.	**Aonla**	In aonla, the percent increase in plant height, plant girth, plant spread, fruit yield kg/tree, fruit set, fruit retention, and physicochemical attributes of aonla fruits were found maximum with the removal of 50% previous season vegetative growth and recommended for commercial utilization for higher yield and rejuvenation of old orchard.	2007-08
16.	**Aonla**	Combined spray of ZnSO4 (0.5%) + Thiourea (0.25%) reduced fruit drop, and increased fruit yield and quality of fruits.	2007-08
17.	**Aonla**	Mancozeb 75 WP (0.3%) applied thrice from September to October	2012-13

		was found to be most effective followed by Bitertanol 25 WP (0.1%) and Copper oxychloride (0.4%) for aonla rust	
18.	**Phalsa**	Application of 15 kg FYM +75gUrea +94g SSP+ 75g MOP+25g each (*Azotobacter +PSB*) + foliar application of ZnSO4 (0.4%) was found to be best treatment for vegetative growth, yield and quality attributes of phalsa fruits, closely followed by 15 kg FYM +75g Urea +94g SSP +75g MOP +25g each (*Azotobacter +PSB*) + foliar application of FeSO4 (0.4%).	2013-14
19.	**Ber**	Application of 40kg. FYM + 800g N + 400g P+ 400g K+ 200g. each (*Azotobacter + PSB*) was found to be the best treatment for plant growth, yield, and quality attributes of ber fruits cv. Banarasi karaka is closely followed by soil application of 40 kg FYM +600gN +300gP +300 g K + 200geach (*Azotobacter + PSB*).	2013-14
20.	**Ber**	To foliar spray of Propiconazole (Tilt) @0.1% or Difenoconazole (score)@0.1% at an interval of 15 days starting from the initiation of the disease to control black leaf spot of ber.	2013-14
21.	**Ber**	The bio-control agents (*Pseudomonas fluorescens and Trichoderma viride*) were not effective in the control of aonla rust. Three foliar sprays of Chlorothalonil (0.2%) at 15 days interval still stands better.	2013-14
22.	**Aonla**	NA-6 showed better shelf life followed by Cvs NA-5 and Francis at room temperature and fruit can be stored for up to 8 days in good condition.	2013-14
23.	**Cowpea**	Application of molybdenum (3spray at 45, 55 and 65 DAS) @ 25ppm+sulphur @15 kg/ha along with NPK (60:60:40 kg/ha) for plant growth and yield with spacing of 50 cm x 30 cm.	2013-14
24.	**Bael**	Applications of 50 kg FYM + 100% NPK + 200g each (*Azotobacter* + PSB) for plant growth and development, fruit quality, and yield.	2014-15
25.	**Turmeric**	Drip once in two days at 80% pan evaporation with 4 l/h resulted in an increase in yield by 10-15 %.	2016-17
26.	**Coriander**	Soil application of Phosphate Solubilizing Bacteria (PSB) @15 kg ha-1 or Azospirillum @15 kg ha-1 along with NPK @ 60:40:30 kg ha-1 is recommended for improving the productivity	2017-18
27.	**Jamun**	The propagation method of patch budding is suitable for jamun nursery plants in June.	2018-19
28.	**Bael**	Application of Propiconazole 25 EC @ 0.1% for control of fungal foliar diseases in bael nursery caused by *Myrothecium roridum, Alternaria alternate, and Fusarium pallidoroseum*	2018-19
29.	**Potato**	Application of 100 kg P_2O_5/ha with recommended dose of 150 kg N/ha & K_2O/ha	2018-19
30.	**Potato**	Planting of potato at optimum date from 25th October to 5th November, harvesting at 90 days and transplanting onion thereafter.	2019-20
31.	**Turmeric**	Rhizome treatment with Propiconazole (0.1%) and foliar spray of Propiconazole (0.1 %) was recommended for the management of turmeric foliar diseases - leaf spot (*Colletotrichum capsici*) and leaf blotch (*Taphrina maculans*).	2021-22
32.	**Coriander**	Spraying Propiconazole (0.1 %) at the initiation of the disease followed by a second spray 15 days after the first spray was recommended for the management of coriander powdery mildew (*Erysiphe polygoni)*	2021-22

33.	**Coriander**	A ready mixture of fungicidal formulation containing Azoxystrobin 11% + tebuconazole 18.3% SC has been recommended for the management of stem gall disease of coriander.	2021-22
34.	**Isabgole**	Standardization of 30 cm × 10 cm spacing and 20 Tone FYM for plant growth and yield of isabgole under organic cultivation.	2021-22
35.	**Aloe vera**	Standardization of 60 cm × 60 cm spacing and 20 Tone FYM for plant growth and yield of aloe vera under organic cultivation.	2021-22
36.	**Basil**	Standardization of 60 cm × 45 cm spacing and 12 Tone FYM for plant growth, fresh herb and dry herb under organic cultivation.	2021-22
37.	**Opium poppy**	The soil application of FYM 500 g/m^2 with *T. harzianum* + *P. fluorescens* @ 2%, 4-5 days before sowing of seed. Seed treatment with Streptocycline sulphate @ 0.03% and Metalaxyl @ 2.5g/kg of seed. On appearance of disease symptoms spray of *T. harzianum* + *P. fluorescens* @ 0.5%. The second and third spray of Streptocycline sulphate @ 0.03% and Metalaxyl @ 0.25% at 15 days of interval for the control of downy mildew, collar rot, root rot and bacterial blight.	2021-22
38.	**Potato**	Application of 2/3rd nitrogen (100 kg/ha) through inorganic fertilizer and remaining 1/3rd nitrogen through FYM is recommended	2021-22
39.	**Seed spices**	Intercropping of coriander with garlic is an excellent way to increase productivity (44.2 over 14.8 q/ha) and profitability, with the highest benefit-to-cost (B: C) ratio (2.86 over 1.8) from the coriander sole cropped area.	2022-23
40.	**Fennel**	Foliar spray of zinc sulphate and iron sulphate, each @ 4g/l with RDF at 60, 75, and 90 days after sowing in fennel is recommended for higher yield of 14.7% over untreated and net returns with a high BC ratio of 20.8% over untreated plot	2022-23
41.	**Coriander**	Three sprays of Hexaconazole 5 EC@ 0.005% + First foliar spray of Emamectin benzoate-5%SG@ 4.0g/10 lit and second spray of Azadirachtin 3000 ppm @ 3 ml/lit is effective for the management of stem gall, PM and aphid	2022-23
42.	**Asalio**	The application of 12.0 Tone FYM/ha is sufficient for the plant growth and quality production of asalio.	2022-23
43.	**Aloe vera**	The soil application of FYM 1.0 Kg/m^2 enriched with *Trichoderma* + *Pseudomonas* talc-based formulation each @ 2.0% at the planting time. On the onset of disease symptoms three sprays of *P. fluorescence* @ 2.0% of talc-based formulation and Neem oil @ 300 ppm under IDM	2022-23
44.	**Basil**	The soil application of FYM 1.0 Kg/m^2 enriched with *Trichoderma* + *Pseudomonas* talc-based formulation each @ 2.0% at the planting time. On the onset of disease symptoms three sprays of *P. fluorescence* @ 2.0% of talc-based formulation and Neem oil @ 300 ppm under IDM.	2022-23
45.	**Agri-silviculture System: Paddy**	Paddy crops can be grown under *Casuarina equisetifolia* and *Dalbergia sissoo* based agri-silviculture system indicate that mean grain yield among the variety (Sarjoo-52) were recorded (1.96 t ha^{-1} and 2.01 t ha^{-1}).	2022-23
46.	**Agri-silviculture System: Mustard**	The mean grain yield of the mustard variety under *Casuarina equisetifolia* and *Dalbergia sissoo* based agri-silviculture system	2022-23

		indicate that among the variety (NDR-8501) were recorded (1.04 t ha^{-1} and 1.07 t ha^{-1}).	
47.	**Agri-silvi-horti System: Turmeric**	The yield potential of turmeric (*Curcuma longa*) under agri-silvi-horti system on sodic soil. The fruit yield of guava (5.27 t ha^{-1}-yr^{-1}, pruned green wood material (5.14 t $ha^{-1}yr^{-1}$), and rhizome turmeric under intercrop (6.30 t $ha^{-1}yr^{-1}$) in treatment doses 50% NPK+ 50% FYM and followed by treatment 100% FYM.	2022-23

Germplasm

The college is enriched with an active germplasm collection of major fruit, vegetable, spice, floriculture and crops etc. This germplasm collection serves as a valuable resource for breeding programs and genetic conservation efforts. The college has conserved a total of 678 vegetables, 724 spices, 336 fruits, 185 flowers, 157 medicinal and aromatic plants and 15 forest trees germplasms. The germplasms details are given below-

Sr. No.	Crops	Number of germplasms	Sr. No.	Crops	Number of germplasms
Vegetables Crops			**Fruit Crops**		
1.	Bottle gourd	40	**38.**	Aonla	21
2.	Bitter gourd	34	**39.**	Bael	22
3.	Pumpkin	48	**40.**	Ber	64
4.	Sponge gourd	50	**41.**	Mango	45
5.	Ridge gourd	20	**42.**	Guava	22
6.	Ash gourd	25	**43.**	Jackfruit	18
7.	Cucumber	32	**44.**	Jamun	25
8.	Pointed gourd	09	**45.**	Citrus	38
9.	Long melon	18	**46.**	Litchi	07
10.	Round melon	15	**47.**	Karonda	05
11.	Muskmelon	22	**48.**	Kamlam (Dragon Fruit)	04
12.	Watermelon	15	**49.**	Phalsa	02
13.	Tomato	45	**50.**	Sub-Temperate (Apple, Peach, Pear, Plum, Apricot, Kiwifruit, Almond, Persimmon)	35
14.	Cherry tomato	32	**51.**	**Other Fruits:** (Sapota, Barbados cherry, Monkey Jack, Pomegranate, Banana, Custard apple, Coconut, Mulberry, Areca Nut, Cashew Nut, Fig, Paniala, Water Apple and tamarind)	28

			Sub Total		**336**
15.	Brinjal	80	**Spice Crops**		
16.	Okra	34	**52.**	Ginger	66
17.	Chili	23	**53.**	Turmeric	186
18.	Green Mustard	24	**54.**	Coriander	141
19.	Summer Squash	27	**55.**	Fenugreek	148
20.	Garden Pea	35	**56.**	Fennel	100
21.	Moringa	15	**57.**	Black cumin	37
22.	Carrot	10	**58.**	Ajwain	46
			Sub Total		**724**
23.	Radish	15	**Forestry Trees**		
24.	Cowpea	10	**59.**	Eucalyptus	05
Total		**678**	**60.**	Shisham	10
Medicinal and Aromatic Plants				**Sub Total**	**15**
25.	Opium Poppy	35	**61.**	**Flower Crops**	
26.	Lemongrass	16	**62.**	Rose	10
27.	Vetiver	12	**63.**	Chrysanthemum	18
28.	Aloe Vera	24	64.	Gladiolus	14
29.	Babchi	02	**65.**	Gerbera	08
30.	Palmarosa	01	**66.**	Marigold	05
31.	Kalmegh	20	**67.**	Tuberose	04
32.	Shatavari	24	**68.**	Bougainvillea	10
33.	Ashwagandha	07	**69.**	Orchid (Phalaenopsis)	01
34.	Mandukaparni	01	**70.**	Others flower crops and trees	115
35.	Isabgol	12		**Sub Total**	**185**
36.	Basil	01			
37.	Tulsi	02			
Sub Total		**157**			
	Grand Total of Germplasm				**2095**

ICAR, Govt. of India, State Govt. of UP, Non-Govt. and Sanctioned Projects

Total Budget: 2627.09 Lakh

Sr. No.	Name of the Scheme/Project/ Endowments/ Chairs	Year of Award	Funds provided (INR in lakhs)
ICAR Funded -06			
1.	AICRP on Arid Fruits	1983-84	119.20
2.	AICRP on Vegetable Improvement	1980-81	154.55
3.	AICRP on Potato Improvement	1985-86	182.32
4.	AICRP on Spices	1995-96	181.83
5.	AICRP on Agroforestry	1987-88	148.95
6.	AICRP MAP&B	1987-88	394.09
Govt. of India-02			
7.	Mission for Integrated Development of Horticulture (MIDH)	1995-96	55.85
8.	Assessment of determinates of bird assemblage across rural, urban gradient in and around selected cities of Uttar Pradesh	2023-25	09.00
State Govt. Funded- 02			
9.	Establishment of Tissue Culture Laboratory for Mass Multiplication of Quality Planting Material of Banana for Increasing the Income of Farmers	2023-26	874.00
10.	Understanding molecular and biochemical pathways to mitigate fruit dropping and cracking in Bael	2023-26	50.00
Non-Govt.-03			
11.	IFFCO	2019-20	0.44
12.	IFFCO & DMFW	2020-21	1.64
13.	IFFCO, AGM & Fortis	2021-22	21.7
Sanctioned Projects by State Govt. Funded- 04			
14.	Establishment of Hi-Tech Floriculture Center for Strengthening of Research and Development of Entrepreneurship	2021-22	230.77
15.	Demonstration of Drip Irrigation / Fertigation under Diversified Cropping System	2020-21	99.50
16.	Demonstration and Establishment of New Polycarbonate Green House and Net House for Nursery Production and Cultivation of Horticultural Crops	2020-21	72.25
17.	Determination of bird assemblages and associated habitat characteristics in protected and unprotected wetlands of eastern Uttar Pradesh	2021-24	31.00

Extension:

The college is playing a leading role in the transfer of technology by providing new directions to the extension of education for the dissemination of research findings. Technologies are transferred to small marginal and resource-poor farmers, skill up-grading of extension agencies through the eleven 25 Krishi Vigyan Kendras located in the eastern part of Uttar Pradesh. The staff is closely involved in various programmes of extension viz. Agricultural Technology Information Center and adopted village by college, Kisan Mela, WhatsApp and phone call and

advisory service to the farmers and agencies related to the agricultural development programme. Regular training impacted growers of fruit crops, vegetable crops, flower crops, medicinal and aromatic plants, post-harvest technologies and agroforestry systems help to improve the skill development of the beneficiaries.

Resource Generation

A substantial amount has been generated through various activities including the sale of seeds, the sale of planting materials of fruit, flowers and ornamental, forest, and medicinal plants.

The Way Forward/ Future Plans

- Substantial utilization of natural resources with environmental protection.
- Advancement in teaching to improve the learning of UG and PG students
- Modernization of laboratories and establishment of a center of excellence in Horticulture and Forestry
- Development of industry-institutional linkage to mentor students for better research work, employment, and entrepreneurship
- Prioritizing thrust areas of research in Horticulture and Forestry for, Climate Resilient Technologies, Precision Horticulture, Natural farming, Organic farming
- Development of National and International linkage for exposure and exchange of ideas among faculties and students
- Adoption of a Fertigation system in the total farm area
- Development of tissue culture plants of Banana, Pomegranate, Strawberry, Gerbera, Pointed gourd, etc.
- Development of grafted vegetable plants to tolerate abiotic and biotic stresses
- Strengthening of PHT Lab for commercial production of different value-added products
- Strengthening and upgradation of faculties skills by National and international training/ exposure visits