



**CENTRE OF ADVANCED FACULTY TRAINING  
IN\  
AGRONOMY,  
G. B. P. UNIVERSITY OF AGRICULTURE AND TECHNOLOGY,  
PANTNANAGAR**

**Introduction:**

The department of Agronomy is one of the oldest department established with the establishment of College of Agriculture/ University in 1960. In the initial stages only U.G. course programme existed, however, with need of time Masters and Ph.D. degree programmes were started in 1963 and 1965 respectively. Though, the UG & PG. degree curriculum remained under change/up gradation from time to time as per need but since 1960 UG degree programme and since 2010-11 PG degree programme have been upgraded as per ICAR guidelines. This department serves as a core facility for running the teaching programme for UG & PG students. The department has largest faculty and was served by the stalwarts known nationally and internationally. The faculty has contributed in various professional disciplines in the field of Agronomy. The department also programmed problem based research work with mandate to develop cost effective and adoptable production technology for precise use of resources to maintain sustainability. The department has well planned transfer of technology for the use of farmers and other agencies outside and in the area of jurisdiction of the University. Human resource development activity of the department is also one of the unique features in training the UG students by offering courses like Practical Crop Production, (PCP) and Rural Agriculture Work Experience (RAWEX). These courses are unique of its kind and the department of Agronomy at this University is the leader in the country in organizing these courses much effectively.

Considering the significant contribution made by the department, ICAR recognized and entrusted the responsibility for development of human resource in the field of Agronomy. For this ICAR provided Centre of Advanced Studies in 1994-95 and Centre of Advanced Faculty Training from 2010-11. Since then department has contributed immensely in training faculty from different parts of the country to strengthen human resource in the field of Agronomy.

**Objective of the CAFT:**

- a. Human Resource Development.
- b. Site specific interactive learning: Issues, problems and possible solutions.
- c. Infra-structural and research competence development.

**Faculty: Name and Designation**

<b>Sl. No.</b>	<b>Name of faculty</b>	<b>Designation</b>
1.	Dr. K.S. Shekhar	Professor& Head
2.	Dr. B.S. Mahapatra	Professor
3.	Dr. Virendra P. Singh	Professor
4.	Dr. M.S. Pal	Professor
5.	Dr. Subhash Chandra	Chief Scientist
6.	Dr. Rohitashav Singh	Professor
7.	Dr. Vijay Pal Singh	Professor
8.	Dr. Anil Shukla	Professor
9.	Dr. Sunita T. Pandey	Professor
10.	Dr. V.K. Sah	Professor (Agroforestry)
11.	Dr. V.K. Singh	Professor
12.	Dr. D.K. Singh	Professor
13.	Dr. S.K. Lavania	Professor (Agroforestry)
14.	Dr. Chandra Bhushan	Professor
15.	Dr. M.S. Negi	Professor
16.	Dr. Naresh Malik	Professor
17.	Dr. R.K. Sharma	Professor
18.	Dr. Jitendra Kwatra	Professor
19.	Dr. Tej Pratap	Senior Research Officer
20.	Dr. Omvati Verma	Senior Research Officer
21.	Dr. S.P. Singh	Senior Research Officer
22.	Dr. Rajeew Kumar	Senior Research Officer
23.	Dr. Amit Bhatnagar	Senior Research Officer
24.	Dr. Gurvinder Singh	Senior Research Officer
25.	Dr. Dinesh K. Singh	Senior Research Officer
26.	Dr. V.C. Dhyan	Associate Professor
27.	Dr. Sumit Chaturvedi	Associate Professor
28.	Dr. Kranti Kumar	Assistant Professor
29.	Dr. D.K. Shukla	Junior Research Officer
30.	Dr. Ajay Kumar	Assistant Professor
31.	Dr. S. K. Yadav	Assistant Professor
32.	Dr. Amit Kesarwani	Assistant Professor

**Human Resource Development (Particulars of Short Courses/Training programme for HRD conducted during XI Plan Period)**

Sl. No.	Name of the Program	Period	No. of Participants		
			Internal	External	Total
1.	Ecological Agriculture for Sustainability	09.02.2017 to 01.03.2017	4	20	24
2.	Crop Management Strategies for Augmenting Farmers' Income	13.09.2017 to 03.10.2017	5	17	22
3.	Precision Agriculture in Intensive Farming	09.02.2018 to 01.03.2018	2	19	21
4.	New frontiers in agri-resource augmentation and utilization	05.09.2018 to 25.09.2018	3	8	11
5.	Tactical Response Farming for Climate Resilience	08.01.2019 to 28.01.2019	4	15	19
6.	Agronomic Interventions for Augmenting Food, Nutrition and Farmers' Income	20.11.2019 to 10.12.2019	1	13	14

**Infrastructure development (equipments etc.)**

**Modern Teaching Aids: LCD and Accessories purchased**  
**The following equipments were procured**

- Double beam Spectrophotometer
- Analytical Balances -2
- Water distillation Assembly
- Hot plate
- Nitrogen Digestor block
- Deep Freezer
- Auger, Core sampler
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**Renovation of lecture Room/Laboratories:**

- Renovation of seminar Room, Department Library
- Chemical Lab.

**Library upgraded:**

Library was upgraded by purchasing book on various aspects. The expenditure on books is given in financial statement.

**Awards/Recognitions:**

Excellent response of various SAUs and ICAR Institutions by nominating their faculty for training of CAS/CAFT, Agronomy of this University. ICAR also reorganized the activities of the department by awarding **Best Centre Award** to Centre of Advanced Studies, AICARP on Weed Control and Wheat Agronomy.

## Publication

### a. Research Papers-2017-2020

1. Singh V. Pratap, Singh S.P., Kumar A., Satyawali Kavita, Bisht Neema and Singh D.B. 2016. Bioefficacy of herbicides for weed management in transplanted rice. *Indian Journal of Weed Science*. 48(4): 432-434. (Published in 2017)
2. Pratap, Tej, Singh, V. Pratap, Singh, S.P. and Rekha. 2016. Herbicides combination for control of complex weed flora in transplanted rice (*Oryza sativa* L.). *Research on Crops*. 17(4): 657-661. (Published in 2017)
3. Chilwal Aaradhana, Singh S.P., Singh V.P., Mahapatra B.S., Shukla D.K. and Verma Himanshu. 2017. Allelopathic effect of winter weeds on little canary grass (*Phalaris minor* Retz.) and wheat (*Triticum aestivum* L.). *International Journal of Current Microbiology and Applied Sciences*. 6(12): (Accepted)
4. Chilwal Aaradhana, Singh S.P., Singh V.P., Mahapatra B.S. and Shukla D.K. 2017. Determination of allelopathic effect of winter weeds on nutrient content and uptake in wheat. *Journal of Pharmacognosy and Phytochemistry*. 6(6): 1121-1125.
5. Chilwal Aaradhana, Singh S.P., Singh V.P., Mahapatra B.S., Shukla D.K. and Shirazzudin. 2017. Potential allelopathic interference of aqueous extracts of winter weeds on yield and yield attributing characters of wheat (*Triticum aestivum* L.). *Journal of Pharmacognosy and Phytochemistry*. 6(6): 1117-1120.
6. Singh V. Pratap, Singh S.P., Bisht Neema, Kumar A., Satyawali Kavita and Paliwal Arunima. 2017. Assessment of post-emergence weed management in irrigated direct seeded rice. *Indian Journal of Weed Science*. 49(3): (Accepted)
7. Singh, D.K., Singh, R., Singh, G.D., Singh, A.P., Chaturvedi, S and Rathi, A. 2016. Influence of rice (*Oryza sativa*)- wheat (*Triticum aestivum*) system diversification on productivity and profitability under Garhwal Himalayan region. *Indian Journal of Agronomy* 61(4):425-428. (Published in 2017)
8. Netam, C.R., Singh, R., Thakur, A.K. and Netam, A.K. 2016. Effect of crop-establishment methods and weed management options on weed dynamics and productivity of rice. *Indian Journal of Agronomy* 61(3):326-330. (Published in 2017)
9. Singh, R., Rekha, Gupta, A., Pratap, T., Kumar, S. and Kumar, A. 2016. Azimsulfuron as an effective herbicides against sedges in transplanted rice. *Indian Journal of Weed Science* 48(4):251-253.
10. Singh, R., Pramanick, B., Singh, A.P., Neelam, Kumar, S., Kumar, A. and Singh, G. 2017. Bio-efficacy of fenoxaprop-p-ethyl for grassy weed control in onion and its residual effect on succeeding maize crop. *Indian Journal of Weed Science* 49(1):63-66.
11. Singh, D.K.; Singh, R.; Singh, G.; Singh, A. P.; Chaturvedi, S.; Singh, J Rathi, A; and. Singh, M. (2017). Diversification of rice (*Oryza sativa*)-wheat (*Triticum aestivum*) system and its influence on productivity, profitability and energetic under on-farm situation. *Indian Journal of Agronomy* 62 (3): 255-259.
12. Biswajit Pramanick, Koushik Brahmachari, B.S. Mahapatra, Arup Ghosh, Dibakar Ghosh and Sudeshna Kar. 2017. Growth, yield and quality improvement of potato tubers through the application of seaweed sap derived from the marine alga *Kappaphycus alvarezii*. *Journal of Applied Phycology* 29(6): 3253-3260. (NAAS rating 8.37)
13. Amit Kesarwani, Rajeew Shukla, Vijay Pal Singh, DS Pandey, Biswajit Pramanick, Santosh Kumar Yadav and Manisha Rani. 2017. *In-situ* rice residue management under rice-wheat cropping system and their influence on wheat productivity. *Journal of Pharmacognosy and Phytochemistry* 6(5): 1422-1425.
14. Biswajit Pramanick, Koushik Brahmachari, Amit Kesarwani, BS Mahapatra, Dibakar Ghosh and Ajay Kumar. 2017. Harnessing Marine Algae Potential in Sustainable Crop Production. *Agriculture Research & Technology: Open Access Journal* 5(1): 1-3.
15. Tej Pratap, Singh V.P. and Rekha, 2017. Chemical control of weeds in dry seeded rice. *Indian journal of weed science* 49(1): 98-99.

16. Tej Pratap, Rekha and Mahavir Singh 2017. Effect proper on control of complex weed flora in direct seeded rice. *Journal of Hill Agriculture* 8(2): 191-194.
17. Singh, D.K., Gupta, S., Sharma, Y., Bisarya, D., Singh, V. V. and Nanda, G. 2017. Resource management options under organic production system for small and marginal farmers of hilly areas. Souvenir cum proceedings of 30<sup>th</sup> National Convention of Agricultural Engineers and National Seminar on “Technological Innovations for Enhancing Profitability of Small and Marginal Farms” held at College of Technology, GBPUA&T, Pantnagar during 27-28 February, 2017. 235-237 pp.
18. Pal, M.S. and Jain, S.K. 2017. Effect of bio-fertilizers on productivity and profitability of berseem (*Trifolium alexandrinum*) in Tarai region of Western Himalaya. *Indian Journal of Plant & Soil* 4(1):5-8.
19. Pal, M.S. 2017. Diversification of agriculture through different cropping systems. In: National Conference on Diversification of Agriculture for Food & Nutritional Security on 27 & 28 Feb 2017 at ITM University, Gwalior (MP).
20. Pal, M.S. 2017. Resource Efficient Agriculture Production Systems. In: National Conference on Farmers’ Centric Agri-Innovations for Sustainable Development held on 24 & 25<sup>th</sup> March 2017 at CSAUAT, Kanpur.
21. Pal, M. S. 2017. Diversification of agriculture for food, nutrition and environmental security. In: Book of Abstracts. 4 th ICOAF, held at on 24 & 25 th August 2017 Colombo, Sri Lanka (TIKM). pp .62-63.
22. Pal, M.S. 2017. Site specific nutrient management in high quality protein maize (*Zea mays* L.) in Indo-Gangetic plains of India. In: Book of Abstracts. 4 th ICOAF, held at on 24 & 25 th August 2017 Colombo, Sri Lanka (TIKM).pp.47.
23. Panwar P, Chauhan S, Kaushal R, Das DK, Ajit, Arora G, Chaturvedi OP, Jain, Amit Kumar; Chaturvedi, Sumit; Tewari, Salil 2017. Carbon sequestration potential of poplar-based agroforestry using the CO2FIX model in the Indo-Gangetic Region of India. *Tropical Ecology*. 58 (2), 1-9.
24. Satyawali Kavita, Chaturvedi Sumit and Bisht Neema. 2017. Effect of high density Eucalyptus camaldulensis and Melia azedarach plantation on soil nutrients at different planting density. *International Journal of Chemical Studies*. 5(4): 827-831.
25. Satyawali Kavita, Chaturvedi Sumit, Bisht Neema and Dhyani, V.C. 2017. Impact of Planting Density on Wheat Crop Grown Under Different Tree Species in Tarai Agroforestry System of Central Himalaya, India. *Journal of Applied and Natural Science*. 10(1): (Accepted).
26. Satyawali, Kavita, Chaturvedi, Sumit, Bisht, Neema, Maikhuri, Seema, Tewari, Salil, Kaushal, Rajesh. 2017. Impact of planting density on biomass and carbon stock of short rotation tree species under high density conditions. *Indian Journal of Agroforestry*. (Accepted).
27. Sandhya Bhat, RL Lal, KK Mishra and DK Singh (2017). Response of organic formulations on fruiting and yield of litchi (*Litchi chinensis* Sonn.) cv. Rose Scented. *Journal of Pharmacognosy and Phytochemistry* 6(6): 2092-2095.
28. M.K. Bhatt, K.P. Raverkar, R. Chandra, N. Pareek, D.K. Singh and Mohd. Yaseen (2017). Long-Term Impact of Balanced and Imbalanced Fertilization in Rice under Rice-Wheat Sequence in Mollisols on Relationship between Microbial Activity and Yield. *International J. Current Microbiology & Applied Sciences* 6(9): 3431-3438.
29. Mohd. Yaseen, K.P. Raverkar, R. Chandra, N. Pareek, Subhash Chandra and D.K. Singh (2017). Long-Term Impact of Balanced and Imbalanced Fertilization in Rice under Rice-Wheat Sequence in Mollisols on Relationship between Microbial Activity and Yield. *International J. Current Microbiology & Applied Sciences* 6(9): 2107-2117.
30. D.K. Singh, P.C. Pandey, S.D. Thapaliyal and Gangadhar Nanda (2017) Yield and economics of rice as influenced by establishment methods and varieties under Mollisols of Pantnagar . *International J. Current Microbiology & Applied Sciences* 6(6): 297-306.

31. [Seema](#), D.K. [Singh](#) and [Pandey, P.C.](#) (2017) Effect of Conservation Tillage on Wheat Yield and Soil Physical Properties in Rice-Wheat Cropping System. *Indian Journal of Ecology* 44(5):560-563.
32. Qureshi, A., Singh, D.K. and Pandey, P.C. 2017. Site-specific nutrient management for enhancing nutrient-Use efficiency in rice and wheat. *New Agriculturalist* 28(1): 289-296.
33. D.K. Singh, Shilpi Gupta, Gangadhar Nanda, Y. Sharma, V.V. Singh and Dipti (2017) Evaluation of rice varieties for yield under organic farming in Tarai region of Uttarakhand (India). *International J. Current Microbiology & Applied Sciences* 6(4): 734-738.
34. Singh, R., Pramanick, B., Singh, A.P., Chaturvedi, Sumit, Singh, D.K., Neelam and Singh, G.D. 2018 Integrated farming system: A prospective approach towards sustainable agriculture. *International journal of tropical agriculture*. 36 (3):763-769
35. Chaturvedi Sumit, Singh, R., Singh, AP., Pramanick, B., Singh, DK and Dhyani, VC. 2018. Establishment and tillage practices affects crop performance, soil properties, energy generation and economics under rice-wheat cropping system in central Himalayan tarai region. *Journal of Pharmacognosy and Phytochemistry* SP1: 1793-1802.
36. B. Pramanick, K. Brahmachari, D. Ghosh and P.S. Bera. 2018. Influence of foliar application seaweed (*Kappaphycus* and *Gracilaria*) saps in rice (*Oryza sativa*)–potato (*Solanum tuberosum*)–blackgram (*Vigna mungo*) sequence. *Indian Journal of Agronomy* 63 (1): 7-12.
37. Tej Pratap and Rekha 2018. Efficacy of propanil for the mixed weed flora in direct-seeded rice. *Indian Journal of Weed science* Vol-50(1):18-21.
38. Gurvinder Singh, Tanay Saha, Subhash Chandra, Amit Bhatnagar and Samarth. 2018. Productivity of menthol mint (*Mentha arvensis* L.) and wheat (*Triticum aestivum*) as relay and sequential cropping system under different irrigation scheduling. *Indian Journal of Agronomy* 63(1):110-116.
39. Singh, V. Pratap, Singh S.P., Bisht Neema, Kumar A., Satyawali Kavita and Paliwal Arunima. 2017. Assessment of post-emergence weed management in irrigated direct-seeded rice. *Indian Journal of Weed Science*. 49(3):211-215. (Published in 2018)
40. Bisht Kavita; Kulshrestha K.; and Mahapatra B.S. (2018). Quality Of Organically Versus Inorganically Produced Crops- A Comparison. *International Journal of Agriculture Sciences*. (10): 13. 6576-6583.
41. SR Singh, DK Kundu, P Dey, P Singh, and BS Mahapatra (2018). Effect of balanced fertilizers on soil quality and lentil yield in Gangetic alluvial soils of India.. *The Journal of Agricultural Science* 156 (2), 225-240
42. SM Singh, A Shukla, S Chaudhary, C Bhushan, MS Negi, and BS Mahapatra (2018). Influence of irrigation scheduling and hydrogel application on growth and yield of Indian mustard (*Brassica juncea*). *Indian Journal of Agronomy* 63 (2), 246-249
43. R Sinha, MS Negi, BS Mahapatra, and A Shukla (2018). Managing Nitrogen Requirements through Foliar Application of Nitrogen in Mustard (*Brassica juncea* L. Czernj. and Cosson.) . *Int. J. Curr. Microbiol. App. Sci* 7 (04), 3761-3768
44. V Jaggi, S Joshi, H Dasila, BS Mahapatra, and M Sahgal (2018). Evaluation of Soil Health in Short Term Organic Vs Conventional Practices during Paddy Cultivation. *Int. J. Curr. Microbiol. App. Sci* 7 (4), 495-504.
45. Kumar Rajeew, Krishna Maya, Bhatnagar Amit, Pandey DS, Singh Vijay Pal, and Pradeep Ram .2018. Effect of rock phosphate with different acidulates on growth and yield of different field crops. *Indian Journal of Agronomy*. 63 (3): 293-299
46. Chilwal Aaradhana, Singh S.P., Singh V.P., Mahapatra B.S., Shukla D.K. and Kaushik Vasundhara. 2017. Allelopathic assessment of aqueous extracts of winter weeds on growth of little canary grass (*Phalaris minor* Retz.) and wheat (*Triticum aestivum* L.). *International Journal of Current Microbiology and Applied Sciences*. 6(12): 978-983. (Published in 2018)
47. Chilwal Aaradhana, Singh S.P., Singh V.P., Mahapatra B.S., Shukla D.K. and Verma, Himanshu. 2017. Allelopathic effect of winter weeds on little canary grass (*Phalaris*

- minor Retz.) and wheat (*Triticum aestivum* L.). *International Journal of Current Microbiology and Applied Sciences*. 6(12): 984-989. (Published in 2018)
48. Paliwal Arunima, Singh V Pratap, Guru SK, Pratap Tej, Singh SP, Chandra Subhash and Kumar Rajeew. 2017. Soil physical properties as influenced by different conservation agriculture practices in rice-wheat system. *International Journal of Chemical Studies*. 5(4): 757-761. (Published in 2018).
  49. Archana Joshi, Om Prakash, A.K. Pant, Ravendra Kumar & M.S. Negi(2018) Chemical Analysis and Antioxidant Activity of Essential Oils of Two Morphotypes of *Lippia alba* (Mill) N.E. Br. ex Britton & P. Wilson ( Verbenaceae), *Journal of Essential Oil Bearing Plants*, 21:3, 687- 700.
  50. Debashis Dutta, DK Singh, N Subash, N Ravisankar, Vinod Kumar, AL Meena, RP Mishra, Shweta Singh, Vaibhav Kumar, AS Panwar. 2018. Effect of long-term use of organic, inorganic and integrated management practices on carbon sequestration and soil carbon pools in different cropping systems in Tarai region of Kumayun hills. *Indian Journal of Agricultural Sciences* 88(4): 523–529.
  51. Kumar, Amrendra, Pal, M. S. and Bhatnagar, A and Qureshi, A. 2018. Effect of tillage and nutritional management on growth, yield, harvest index and nutrient use efficiency of corn (*Zea mays* L.) in Indo-Gangetic plains of India. *International Journal of Current Microbiology & Applied Sciences* 7(special issue): 4185-4191.
  52. Pal, M. S. and Joshi, Y. P. 2018. Tillage options and its effect on productivity, profitability and quality of forage under feed/fodder-food based cropping systems. *Forage Research* 43 (4): 291-294.
  53. Ashvin Kumar Meena, DK Singh, PC Pandey and Gangadhar Nanda. 2018. Growth, yield, economics, and nitrogen use efficiency of transplanted rice (*Oryza sativa* L.) as influenced by different nitrogen management practices through neem (*Azadirachta indica*) coated urea. *International Journal of Chemical Studies* 6(3): 1388-1395.
  54. DK Singh, PC Pandey, G Nanda and S Rawat. 2018. Long-term effects of inorganic fertilizer and farmyard manure application on productivity, sustainability and profitability of rice-wheat system in Mollisols. *Archives of Agronomy and Soil Science* 65(2): DOI.org/10.1080/03650340.2018.1491032.
  55. Kanchan Nainwal, Omvati Verma Reena (2018) Conservation of Minor Millets for sustaining agricultural Biodiversity and Nutritional Security *Journal Pharmacognosy and Phytochemistry*. SPI: 1576-1580 (E-ISSN: 2278-4136)
  56. Shyamashree Roy and Omvati Verma(2018).Seed Quality and Storage of Wheat (*Triticum aestivum* L.) as Influenced by Basal and foliar Application of Nitrogen. *Natl.Acad.Sci.Lett.*(<http://doi.org/10.1007/s40009-018-0688-0>).

### **Training Manuals.**

- Pandey, D.S. and Sah, V.K. (2017). *Ecological Agriculture for Sustainability*, CAFT Training, 09.02.2017 to 01.03.2017.
- Pandey, D.S. and Shekhar, K.S. (2017). *Crop Management Strategies for Augmenting Farmers' Income*, September 13 to October 03, 2017.
- Pandey, D.S. and Pal, M.S. (2018). *Precision Agriculture in Intensive Farming*, February 09 to March 01, 2018.
- Pandey, D.S. and Chandra, S. (2018). *New frontiers in agri-resource augmentation and utilization*, September 05 to September 25, 2018.
- Shekhar, K.S. and Singh, R. (2019). *Tactical Response Farming for Climate Resilience*, January 8 to January 28, 2019
- Shekhar, K.S. and Shukla, Anil. (2019). *Agronomic Interventions for Augmenting Food, Nutrition and Farmers' Income*, Nov. 20 to Dec. 10, 2019

### **b. Books :**

- INTEGRATED APPROACHES FOR CONTROLLING WEEDS IN TRANSPLANTED RICE (*Oryza sativa* L.). 2017. Authored by Vimal Raj Yadav, V.

Pratap Singh and Biswajit Pramanick. Published by Lap Lambert Academic Publishing, Germany. ISBN- 978-3-330-08562-6.

- RESPONSE OF LATE SOWN MUSTARD VARIETIES TO DIFFERENT NUTRIENT COMBINATIONS. 2017. Authored by Samar Pal, RA Singh and Biswajit Pramanick. Published by Lap Lambert Academic Publishing, Germany. ISBN- 978-3-330-03072-5.

### c. Book Chapters

- D.K. Singh, K.P. Raverkar, Chandra Bhushan and Shilpi Gupta (2017). Organic Package of Practices for Uttarakhand. *In Organic Farming (Crop Production Guide)* (N. Ravishankar, A.S. Panwar, Kamta Prasad, Vipin Kumar, S. Bhaskar *Edts.*). Today and Tomorrow Printer and Publishers, New Delhi p 51-72.
- D.K. Singh, Shilpi Gupta and Yogesh Sharma (2017). Nutrient Management in Organic Farming: Principal and Practices. *In Organic Farming (Crop Production Guide)* (N. Ravishankar, A.S. Panwar, Kamta Prasad, Vipin Kumar, S. Bhaskar *Edts.*). Today and Tomorrow Printer and Publishers, New Delhi p 18-32.
- N. Ravishankar, S.K. Sharma, D.K. Singh, A.S. Panwar and Vipin Kumar (2017). Organic Farming in India: Production Issues and Strategies *In Organic Farming (Crop Production Guide)* (N. Ravishankar, A.S. Panwar, Kamta Prasad, Vipin Kumar, S. Bhaskar *Edts.*). Today and Tomorrow Printer and Publishers, New Delhi p 1-17.

### **2018**

- 1) Edited proceedings of National Agronomy Congress-2018, Pantnagar on “Redesigning Agronomy for Nature Conservation and Economic Empowerment”.
- 2) V C Dhyani and S K Maurya 2018 Impact of Abiotic Stress on Vegetable Crops and its Possible Management In book: Abiotic & Biotic Stress Management in Plants. B.K. Sinha and Reena (Eds.) NEW INDIA PUBLISHING AGENCY New Delhi – 110034 pp 289-316.
- 3) Tej Pratap, Singh S. P., Singh V. Pratap, Sirazuddin and Singh V. V. 2018. Weed problems and their management in cereals crops rice, wheat and maize in India pp. 117- 149. 50 years of Weed Research in India published by Indian Society of Weed Science. ISWS Golden Jubilee International Conference at ICAR-DWR Jabalpur. Edited by Sushil Kumar and Gyanendra Pratap Singh.

### **Financial Statement:**

#### **Expenditure under CAFT during XI Plan**

<b>Head</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>
<b>Operating cost of training</b>	13,13,000.00	13,13,000.00	One Training has been conducted during 20.11.2019 to 10.12.2019 and Second Training will be conducted during from Feb. 4-24, 2020 and the expenditure will be available after 31 <sup>st</sup> March, 2020
<b>Recurring contingency</b>	3,61,586.00	3,85,712.00	
<b>Non- recurring contingency</b>	-	5,00,000.00	
<b>Minor repair/renovation</b>	-	2,00,000.00	
<b>T.A.</b>	-	-	
<b>Library</b>	-	-	
<b>Staff salary</b>	-	-	
<b>Total</b>	16,74, 586.00	23,98,712.00	



