

# Achievements

(2017-20)

## CENTRE OF ADVANCED FACULTY TRAINING IN GENETICS AND PLANT BREEDING



Department of Plant Breeding and Genetics  
Punjab Agricultural University  
Ludhiana-141004

## Progress and Impact during 2017-2020

**1. Name of the CAFT/Department/Division:** Centre of Advanced Faculty Training Department of Plant Breeding & Genetics Punjab Agricultural University Ludhiana

**2. Brief Introduction about the department** (about 100 words):

Since the inception of Punjab Agricultural University, Ludhiana in 1962, the Department of Plant Breeding and Genetics, PAU has been rendering valuable services to the farming community, researchers and students through its strong crop improvement programmes and experienced research and teaching faculties. The development and release of world's first pearl millet hybrid HB-1, world's first virus resistant cotton hybrid LHH-4, single cross maize hybrid PARAS are some of the achievements of the breeders of the this premier department. The Department has nine crop based sections and each section has adequate research farms, genetic resources covering wild and improved germplasm, well established laboratories for conducting basic and advanced research, quality testing lab, etc. Recognizing the expertise and facilities available at the Department and the contribution made by the Breeders of the PAU, the ICAR, New Delhi has established the “Centre for Advanced Studies (CAS) in Plant Breeding and Genetics” at this Department during 1997. The centres was later re-named as “Centre for Advanced Faculty Training”. Under the CAS programme, so far 33 training programmes have been organized by the centre.

**3. Objective of CAFT:**

To conduct trainings of teachers in the field of Plant Breeding and Genetics and develop facilities for better Research for PG students.

**4. Faculty: Name & Designation (as on 20.1.2020):**

Sr. No.	Name	Designation	Date of Retirement	Field of Specialization
1	Dr. N.S. Bains	Plant Breeder	30.11.2021	Wheat Breeding
2	Dr. J.S. Chawla	Plant Breeder	31.3.2021	Maize Breeder
3	Dr K.S. Brar	Plant Breeder	31.1.2021	Oilseeds Breeding
4	Dr. K.S. Thind	Sr. Plant Breeder	31.3.2021	Sugarcane Breeder
5	Dr (Mrs.) Indu Bhagat	Plant Breeder	30.6.2022	Wheat Breeding
6	Dr. T.S. Bains	Breeder (Pulses)	30.6.2022	Pulses Breeding
7	Dr. Saryjeet Singh	Plant Breeder (P)	30.6.2022	Pulses Breeding
8	Dr. Pankaj Rathore	Cotton Breeder	28.2.2025	Cotton Breeding
9	Dr.(Mrs) S.K. Dhillon	Breeder	28.2.2026	Oilseed Breeding
10	Dr. G.S.Mangat	Rice Breeder	30.6.2026	Rice Breeding
11	Dr. V.S. Sohu	Wheat Breeder	28.2.2027	Wheat Breeding

12	Dr. R.S. Sohu	Cotton Breeder	28.2.2027	Cotton Breeding
13	Dr.(Mrs.) Gurjit Kaur	Maize Breeder	30.5.2029	Maize Breeding
14	Dr. B.S.Gill	Plant Breeder	23.3.2029	Pulses Breeding
15	Dr. Paramjit Singh	Cotton Breeder	30.9.2029	Cotton Breeding
16	Dr. R.S. Gill	Plant Breeder	28.2.2030	Sugarcane Breeding
17	Dr. Inderjit Singh	Plant Breeder(P)	30.6.2030	Pulses Breeding
18	Dr.(Mrs) S.K. Sandhu	Sugarcane Breeder	30.11.2030	Sugarcane Breeding
19	Dr. Johar Singh	Wheat Breeder	31.3.2030	Wheat Breeding
20	Dr. S.S. Kandhola	Plant Breeder	30.9.2031	Oilseed Breeding
21	Dr.(Mrs) Ranjit Kaur Gill	Asstt. Plant Breeder	30.9.2031	Pulses Breeding
22	Dr. (Mrs.) Chhaya Attri	Asstt. Plant Breeder	31.7.2031	Oil Seed Breeding
23	Dr. Devinder Pal Singh	Asstt. Plant Breeder	30.4.2031	Forage Breeding
24	Dr. B.S. Cheema	Plant Breeder	31.5.2032	Barley Breeding
25	Dr. Dharminder Pathak	Asstt. Plant Breeder	31.1.2033	Cotton Breeding
26	Dr. (Mrs.) Achla	Asstt. Plant Breeder	31.8.2033	Wheat Breeding
27	Dr. G.S. Mavi	Asstt. Plant Breeder	31.7.2034	Wheat Breeding
28	Dr. Navjot Sidhu	Asstt. Plant Breeder	31.8.2034	Rice Breeding
29	Dr.(Ms) Rupinder Kaur	Asstt. Plant Breeder	31.10.2035	Rice Breeding
30	Dr. Renu Khanna	Asstt. Plant Breeder	31.8.2035	Rice Breeding
31	Dr.(Mrs) Gurpreet Kaur	Asstt. Plant Breeder	31.5.2036	Oilseed Breeding
32	Dr. Rahul Kapoor	Asstt. Plant Breeder	30.4.2036	Forage Breeding
33	Dr. Ruchika Bhardwaj	Asstt. Plant Breeder	31.12.2039	Forage Breeding
34	Dr. Puja Srivastava	Asstt. Plant Breeder	30.4.2040	Wheat Breeding
35	Dr. Simarjit Kaur	Asstt. Plant Breeder	31.10.2041	Wheat Breeding
36	Dr. Dharminder Bhatia	Asstt. Quantitative Geneticist	31.1.2036	Rice Breeding
37	Dr. Tosh Garg	Asstt. Maize Breeder	30.11.2037	Maize Breeding
38	Dr. Inderpreet Dhaliwal	Asstt. Plant Breeder	30.4.2034	Wheat Breeding
40	Dr. Indu Rialch	Asstt. Breeder	30.6.2047	Oilseed Breeding
41	Dr. Veenita Kaila	Asstt. Sunflower Breeder	31.3.2046	Sunflower Breeding
42	Dr.Usha Nara	Asstt. Plant Breeder	31.1.2040	Celery
43	Dr.Shayla Bindra	Asstt. Plant Breeder	30.9.2048	Pulses Breeding
44.	Dr. Gagandeep Singh	Asstt. Plant Breeder	28.2.2047	Maize Breeding
45.	Dr. Mehak Gupta	Asstt. Prof. (Cytogenetics)	30.9.2048	Sunflower Breeding

**5. Human Resource Development: Particulars of CAFT training program for HRD conducted during 2017-2020**

<b>S. No.</b>	<b>Name of the training programme</b>	<b>Year</b>	<b>No. of participants</b>
1	Enhancing germplasm use through prebreeding, evaluation and frontier	2017-18	20
2	Genomics Assisted Crop Breeding Techniques	2018-19	21
3	Biotic and abiotic stress tolerance in plants under changing climatic conditions	2019-20	21

**6. Infrastructure development (equipments etc.):**

**List of Equipments:**

- UV Spectrophotometer
- Vertical Gel Electrophoresis
- Deep Freezer (-80 C)
- Refrigerated Centrifuge
- Thermocycler
- Electrophoresis System
- BOD Incubator
- PowerCan Online UPS System
- Photocopier Machine
- Computer with UPS
- One Olympus Binocular microscope
- Five student compound microscopes
- One Electronic balance
- One CCD Camera with compatible data analysis system
- Two air conditioners
- Tractor MM 241
- Impact Growth Chamber
- Deep Freezer (-20 C)
- Biological research microscope along with Magcam DC-5
- Pneumatic Planter
- Satake Dehuskar
- Soxhlet Fat Extraction System

## 7. Renovation of Lecture Room/Laboratories

White washing /renovation of seminar room, Undergraduate and postgraduate labs, conference room, computer lab and offices

## 8. Library upgraded: Upgradation

Year	2017-18	2018-19	2019-20	Total
Books	7	17	10	34
Thesis	16	15	17	48

## Awards/Recognitions:

Name of teacher	Name of award	Year of award	Awarding institution
Dr U.S Tiwana	Society Fellow Award	2017	Range Management Society, Jhansi
Dr P.S. Sandhu	Fellow, Society for Rapeseed-Mustard Research, Bharatpur	2017	Society for Rapeseed- Mustard Research, DMR Bharatpur
Dr Shayla Bindra	Award of Gold Medal	2017	Himotkarsh Sahitya Sanskriti Avem Jan Kalyan Parishad (HP)
Dr. Guriqbal Singh	ISPRD Excellence Award 2017	2017	Indian Society of Pulses Research & Development (ISPRD), Kanpur
Drs. Ravinder Singh and Gaurav Kumar Taggar	Fellow	2017	Indian Society of Pulses Research & Development (ISPRD), Kanpur
Dr. Ravinder Singh	Councillor	2017	Indian Society for the Advancement of Insect Science, Deptt of Entomology, PAU, Ludhiana
Dr. Gaurav Kumar Taggar	Editor, Journal of Insect Science	2017	Indian Society for the Advancement of Insect Science, Deptt of Entomology, PAU, Ludhiana
Dr. Shayla Bindra	Gold Medal	2017	CSKHPKV, Palampur
Dr. Virender Sardana	Fellow	2017	Indian Society of Oilseeds Research, Hyderabad
Dr.Satwinder Kaur Dhillon	Fellow	2017	Indian Society of Oilseeds Research ,Hyderabad
Dr. Sarvjeet Singh	President	2018	Indian Society of Pulses Research & Development (ISPRD), Kanpur (North zone chapter)
Dr. Ravinder Singh	Secretary	2018	Indian Society of Pulses Research & Development (ISPRD), Kanpur (North zone chapter)
Dr. Mehak Gupta	Young Scientist	2018	Indian National Science Academy

Dr. Sarwan Kumar	Australian Government's Endeavour Research Fellowship	2018	Department of Education and Training, Australia
Drs NS Bains, VS Sohu, Kuldeep Singh, Parveen Chhuneja, GS Mavi	Gene Stewardship Award	2018	Borlaug Global Rust Initiative (BGRI)
Dr Sarvjeet Singh	Prof. Manjeet S. Chhinan Distinguished Professor Chair	2018	PAU, Ludhiana
Dr Sarwan Kumar	Endeavour Research Fellowship	2018	Department of Education and Training, Govt of Australia
Dr Mehak Gupta	INSA: young scientist award	2018	Indian National Science Academy, New Delhi
Dr Buta Singh	Best Thesis Award	2018	Indian Society of Agronomy
Dr.G.S.Mangat	Appreciation certificate for his contribution in rice research	2019	Punjab Agricultural University, Ludhiana
Dr. Sarvjeet Singh	Appreciation certificate for his contribution in pulses research	2019	Punjab Agricultural University, Ludhiana
Dr.Dharminder Pathak	Appreciation certificate for his contribution in pulses research	2019	Punjab Agricultural University, Ludhiana
Dr Virender Sardana,	Awarded Gold Medal in 4 <sup>th</sup> National Brassica Conference held at Chandra Sekhar Azad University of Agriculture and Technology (CSAUA&T), Kanpur, U.P. on February 1-3, 2019.	2019	Society of Rapeseed Mustard Research, ICAR-Directorate of Rapeseed-Mustard Research, Bharatpur
Dr.J.S.Chawla and scientists team of maize section	Best AICRP -Maize centre Award for the biennium 2017-18 and 2018-19 to PAU Ludhiana from	2019	IIMR-ICAR, Ludhiana at 62 <sup>nd</sup> annual maize workshop of All India Coordinated Maize Improvement Project (ICAR) Maize held at AAU, Jorhat, Assam from April 5-7, 2019
Dr.R.S.Sohu and scientists of Fodder section	Appreciation certificate by IGFRI, Jhansi	2019	ICAR, New Delhi for the development of oats and Napier bajra hybrid varieties at national level
Dr Pushp Sharma, Principal Physiologist	honoured as Fellow	2019	Society for Rapeseed Mustard Research (SRMR), Bharatpur

## 10. Publications

### Year 2017

- Arora M, Kocher S G and Sohu R S (2017) Evaluation of sweet sorghum varieties for their juice characteristics. *Journal of Food, Agric and Environ.*, 15 (2): 61-63
- Ashlesha and Paul, Y S (2017). Bioefficacy of plant extracts and biocontrol agents against some plant pathogenic fungi. *Indian Journal of Ecology* 44 (3): 598-603.
- Bains, T. S., Gill, R. K., Singh, S. and Singh, I. (2017). Variety SML1115. *Indian J Genet* 77(2): 326.
- Batra N, Kaur K, Kaur H and Singh B (2017) Status of defensive enzymes and contents of total phenols, tannins and nutrients determine aphid resistance in barley. *Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.* DOI 10.1007/s40011-017-0899-z
- Bhardwaj R, Sohu R S, Gill B S, Goyal M and Goyal M (2017) Correlation among fodder yield, quality and morpho-physiological traits under contrasting environments in sorghum. *Electronic J Plant Breed* 8 (3):933-938.
- Bhatia D, Wing RA, Yu Y, Chougule, K, Kudrna D, Rang A, Singh K (2018) *Euphytica* 214: 41. <https://doi.org/10.1007/s10681-018-2119-1>
- Bhatia, D., Joshi, S., Das, A., Vikal, Y., Sahi, G. K., Neelam, K., Kaur, K. and Singh, K. (2017). Introgression of yield component traits in rice (*Oryza sativa sspindica*) through interspecific hybridization. *Crop Sci*, **57**: 1-17. DOI: 10.2135/cropsci2015.11.0693.
- Bhatia, D., Joshi, S., Das, A., Vikal, Y., Sahi, G. K., Neelam, K., Kaur, K. and Singh, K. (2017). Introgression of yield component traits in rice (*Oryza sativas sp indica*) through interspecific hybridization. *Crop Science* **57**:1-17. DOI: 10.2135/cropsci 2015.11.0693.
- Bhavyasree, R. K., Singh, S. and Singh I. (2017). Advanced back cross strategy for alien introgression for productivity enhancing traits in chickpea (*Cicer arietinum* L.) *Legume Res*, (LR 3746) DOI:10.18805/lr.v0i0.7847.
- Bhavyasree, R. K., Singh, S. and Singh, I. (2017). Advanced backcross strategy for alien introgression for productivity enhancing traits in chickpea (*Cicer arietinum* L.) *Legume Research* (Accepted).
- Bindra, S. and Paul, S. (2017). Genetic variability and association studies in linseed (*Linum usitatissimum* L.). *The Bioscan*, **11** (3): 1855-1859.
- Bindra, S., Mittal, R. K., Sood, V. K. and Chaudhary, H. K. (2017). Genetic analysis of various quantitative traits in inter-varietal crosses of *Vigna mungo*, *Legume Research* 40(5) 795-802.
- Brar R. S., Gill, R. S., Lore, J. S. and Khanna, R. 2017. Molecular screening of hybrid rice parental lines for bacterial blight resistance genes. *Indian Phytopath.* **70**: 40-44. (NAAS Rating: 5.90).
- Brar, H. S. and Singh, R. (2017). Role of trichomes on leaves and pods for imparting resistance in chickpea [*Cicer arietinum* (L.)] genotypes against *Helicoverpa armigera* (Hübner). *J App Nat Sci.* 9(4) : 2193-2198 [NAAS rating 5.02].

- Chouksey ,H., Sardana, V. and Sharma, P. (2017) Influence of phosphorus application on growth pattern, physiological attributes and productivity of Indian mustard (*Brassica juncea*) cultivars. *Indian J Ecol.* **44**(2): 244-249.
- Chouksey, H., Sardana, V. and Sharma, P. (2017). Variability in Indian mustard (*Brassica juncea*) genotypes in response to applied phosphorus. *Indian Journal of Agronomy*, 62(3): 374-377. (NAAS rating: 5.46).
- Chugh, P., Kaur, J., Grewal, S. K., Singh, S. and Agarwal, S. (2017) Up regulation of superoxide dismutase and catalase along with proline accumulation mediates heat tolerance in lentil (*Lens culinaris* Medik.) genotypes during reproductive stage. *Indian J Agric Biochem* 30 (2): 195-199 [NAAS rating 4.69].
- Devi, K., Sangha, M. K., Kumar, P., Pathak, D. and Rathore, P. (2017). Effect of ABA on response of cotton genotypes in terms of morphophysiological parameters and osmolytes against salinity stress. *Agric Res J*, **54**: 214-20.
- Dhillon, B. S., Sharma, P.K. and Kingra, P.K. (2017). Agronomic measures to improve thermal energy utilization by *spring* sunflower (*Helianthus annuus* L). *J Agrometeorol*, **19** (1): 34-38.
- Dhillon, B. S., Sharma, P.K. and Kingra, P.K. (2017). Effect of foliar application of boron and tibia on crop phenology and solar energy utilization efficiency of *spring* sunflower under staggered sowing. *Agric Res J*, **54** (2): 202-207.
- Dhillon, B. S., Sharma, P.K., Sharma S and Sharma, S. (2017) Oil yield and fatty acid composition of *spring* sunflower as affected by sowing date, intra row spacing and nitrogen. *Indian Journal Agricultural Biochemistry* 30 (2):135-40 [NAAS Rating: 4.69]
- Garg, T., Mallikarjuna, B. P., Thudi, M., Samineni, S., Singh, S., Sandhu, J. S., Kaur, L., Singh, I., Sirari, A., Basandrai, A., Basandrai, D., Varshney, R. K. and Gaur, P. M. (2018). Identification of QTLs for resistance to Fusarium wilt and Ascochyta blight in a recombinant inbred population of chickpea (*Cicer arietinum* L.). *Euphytica* 214(3): doi: 10.1007/s10681-018-2125-3 [NAAS rating 7.63].
- Gill, R. K., Kumar, A., Singh, I. and Tyagi, V. (2017). Assessment of induced genetic variability in blackgram (*Vigna mungo* L.). *J Food Legumes* 30(2): 31-34 [NAAS rating 4.97].
- Goyal M, Kaur H, Singh D P and Tiwana U S (2017) Evaluation of nutritional quality and yield of winter forages prevalent in Punjab. *Range Mgmt and Agroforestry* 38(2): 249-53. (NAAS rating 6.06)
- Gupta, N. and Thind, S.K. (2017). Grain yield response of drought stressed wheat to foliar application of glycine betaine. *Indian J Agric Res*, **51** (3): 287-291
- Gupta, S., Kumar, H., Sardana, V. and Atwal, A. K. (2017). Effect of nitrogen rate on seed yield and oil content in *Brassica* spp. cultivars *The Bioscan* 18(3): 1803-1807. (NAAS rating: 5.26)



- Hooda K S, Khokhar M K, Sekhar, Bagaria P K, Sharma SS, Harleen Kaur, Gogoi R and Reddy RR (2017) Identification of resistance sources against post flowering stalk rots in maize. *Indian Phytopath.* **70**: 432-39.
- Jindal Jawala, Singh Gurmail and Kumar Ravinder (2017). Efficacy of some biorational insecticides against *Chilopartellus* (Swinhoe) in maize. *Annals of Plant Protection Sciences* 25(2) 244-247.
- Kapoor R and Choudhary K (2017). Genetic diversity analysis of fodder oats (*Avena sativa* L.) germplasm by microsatellite markers. *J AgriSci Tech* 19 (6): 1369-1379.
- Kapoor R and Singh G (2017). Estimation of heterosis and combining ability in oats (*avena sativa* l.) for green fodder yield and attributing traits using line x tester design. *Int. J Pure App Biosc.* 5 (3): 863-870.
- Kapoor R and Singh G (2017). An attempt to produce oat haploids using oat x maize hybridization technique. *Int. J Pure App Biosc.* 5 (5): 234-240.
- Kapoor R and Singh P (2017). Top cross analysis for heterosis and combining ability in forage pearl millet (*Pennisetum glaucum*L.) *Forage Res.* 43 (2): 89-96.
- Kapoor Rahul (2017) Variability and character association studies in fodder maize (*Zea mays* L.) hybrids. *Forage Res.* 43 (1): 67-69.
- Kapoor Rahul (2017). Genetic variability and association studies in Napier grass (*Pennisetum purpureum* schumach.) for green fodder yield and quality traits. *Electronic J Plant Breed*, 8(3): 885-891
- Kaur Ajinder, Kaur Kamal Preet, KaliaAnu, Rani Upasana, Kahlon Jagroop Gill, Sharma Rajesh, MalaviyaDevendra, Kapoor Rahul and SandhuJagdeep Singh (2017) Generation of interspecific hybrids between *Trifolium vesiculosum* and *T. alexandrinum* using embryo rescue. *Euphytica*: 213-253. (NAAS rating: 7.62)
- Kaur G and Goyal M (2017) Nitrogen application and oats genotypes influence nutritional aspects of oats (*Avena sativa* L.) grains at milky and mature stage of development. *Indian Journal of Animal Nutrition* 34(2): 155-62.
- Kaur G and Goyal M (2017). Effect of growth stages and fertility levels on growth, yield and quality of fodder oats (*Avena sativa* L.). *Journal of Applied and Natural Science* 9 (3): 1287-96. (NAAS rating 4.84)
- Kaur H, Salh PK and Singh B (2017) Role of defense enzymes and phenolics in resistance of wheat crop (*Triticum aestivum* L.) towards aphid complex. *J Plant Int* 12(1): 304-311.
- Kaur R, Goyal M and Tiwana U S (2017). Yield and quality attributes with seasonal variation in Napier Bajra hybrid (*Pennisetum purpureum* × *Pennisetum glaucum*) under different nitrogen environments. *Journal of Applied and Natural Science* 9 (3): 1350-57.
- Kaur R, Mavi GS, Sood N, Malhotra A, Kaur H and Sohu VS (2017) Genetic variation for Grain zinc and iron concentration and quality parameters in diverse wheat (*Triticum aestivum* L.). *Appl Biol Res* 19(2): 138-145.

- Kaur R, Mavi GS, Sood N, Malhotra A, Kaur H and Sohu VS (2017) Variation in Zinc, Iron and Quality parameters in wheat lines at different sowing locations. *Int J Pure & appl Biosci* (Accepted) (NAAS Rating 4.74)
- Kaur, A and Kumar, M. (2017). Effect of different planting methods and nitrogen levels on the quality of *kharif* maize (*Zea mays* L.). *Advance Research Journal of Crop Improvement* 8 (2): 179-182 (NAAS Rating 3.86)
- Kaur, A and Kumar, M. (2017). Variation in productivity of maize (*Zea mays* L.) under different planting methods and nitrogen levels. *Agricultural Research Journal* 55 (1): 154-155
- Kaur, A., Grewal, S. K. and Singh, R. (2017). Antioxidants potential in seeds of chickpea genotypes differing in *Helicoverpa armigera* resistance. *Indian J Agric Biochem* 30 (2) 161-166. DOI 10.5958/0974- 4479.2017.00026.0.
- Kaur, A., Grewal, S. K., Singh, R. and Bhardwaj, R. D. (2017). Induced defense dynamics in plant parts is requisite for resistance to *Helicoverpa armigera* (Hubner) infestation in chickpea. *Phytoparasitica*. DOI 10.1007/s12600-017-0615-9
- Kaur, A., Grewal, S. K., Singh, R. and Kaur, J. (2017). Defense system in chickpea genotypes differing in tolerance to *Helicoverpa armigera* infestation. *Indian J Plant Physiol*. DIO 10.1007/s40502017-0310-3
- Kaur, B., Sangha, M. K. and Kaur G. (2017) Development of Near-Infrared Reflectance Spectroscopy (NIRS) Calibration model for estimation of oil Content in *Brassica juncea* and *B napus*. *Food Anal Method*, 10:227–233
- Kaur, D., Grewal, S. K., Kaur, J., Singh, S. (2017). Differential proline metabolism in vegetative and reproductive tissues determine drought tolerance behaviour in chickpea. *Biologia Plantarum* 61 (2): 359-366. doi:10.1007/s10535-016-0695-2.
- Kaur, D., Grewal, S. K., Kaur, J., Singh, S. (2017). Free radical scavenging activities can mitigate the effect of water stress in chickpea. *Crop Pasture* <http://dx.doi.org/10.1071/CP17022>.
- Kaur, G. and Goyal, M. (2017). Nitrogen application and oats genotypes influence nutritional aspects of oats (*Avena sativa* L.) grains at milky and mature stage of development. *Indian J Anim Nutr*, 34(2): 155-162
- Kaur, G., Sharma, P., Chhabra, D., Chand, K. and Mangat, G. S. (2017). Exploitation of endophytic *Pseudomonas* sp. for plant growth promotion and colonization in rice. *J Appl Nat Sci*. 9(3): 1310-1316.
- Kaur, H., Singh, H., Hunjan, M. S. and Kaur, G. (2017). Qualitative, quantitative and molecular detection of aflatoxins from maize grains in North West India. *Maydica*, (Accepted for publication).
- Kaur, J. and Khanna, V. (2017). Bacterial Adaptation to Cold. *Int. J Curr Microbiol App Sci* 6(11): 628-635.

- Kaur, K. and Gill, B.S. (2017). Effect of Varying Temperature and Photoperiod on Grain Yield and its Components in Soybean Genotypes Grown in Punjab, India. *Environ Eco* 35: 2745-2749.
- Kaur, K., Gill, B. S., Sharma, S. and Kushwah, A. (2017). Tocopherol Content as Affected by Different Sowing Dates and its Correlation with Other Quality Traits in Soybean [*Glycine max* (L.) Merrill]. *Int. J. Curr. Microbiol. App. Sci* 6: 1492-1499.
- Kaur, K., Kaur, J. and Kaur, G. (2017) Effect of storage conditions on the production of fumonisins in maize grains. *Plant Disease Res*, **32(1)**: In Press
- Kaur, K., Kaur, J., Grewal, S. K., Singh, S. and Sidhu, S. K. (2017). Herbicide induced physiological changes in chickpea (*Cicer arietinum* L.) genotypes *J Food Legume* 30 (3) 26 – 33.
- Kaur, M., Sardana, V. and Sharma, P.(2017). Growth pattern and productivity of component crops in intercropping of Indian rape (*Brassica rapa* var. *Toria*) with canola oilseed rape (*Brassica napus*) and Ethiopian Mustard (*Brassica carinata*). *Indian Journal of Ecology* 44(3): 548-554.
- Kaur, N. and Goyal M. (2018). Phytohormones influence biochemical metabolites and quality traits of oats (*Avena sativa* L.) genotypes. *Agric Res J* 55: 224-229
- Kaur, R., Shivay, Y. S., Singh, G., Virk, H. K., Sen, S. and Rajni. (2018). Increasing area under pulses and soil quality enhancement in pulse-based cropping systems-Retrospect and prospects. *Indian Journal of Agricultural Sciences* 88 (1): 10-21
- Kaur, R., Uppal, S. K. and Sharma, P. (2017). Antioxidant and antibacterial activities of sugarcane bagasse lignin and chemically modified lignins. *Sugar Tech*, DOI: 10.1007/s12355-017-0513-y.
- Kaur, R., Uppal, S. K. and Sharma, P. (2017). Antioxidant and antibacterial activities of sugarcane bagasse lignin and chemically modified lignins. *Sugar Tech*. DOI: 10.1007/s12355-017-0513-y
- Kaur, S., Bains, T. S. and Singh, P. (2017). Creating variability through interspecific hybridization and its utilization in mungbean [*Vigna radiata* (L.) Wilczek]. *J Appl Nat Sci* 9(2): 1101-1106 [NAAS rating 4.84].
- Kaur, S., Bains, T. S., Sirari, A. and Kaur, S. (2017). Evaluation and molecular characterization of advanced interspecific genetic improvement in mungbean. *Legume research*. ISSN: 0976-057 [NAAS rating 6.12].
- Kaur, S., Gill, R. K., Bains, T. S., Kaur, M. and Thakur, S. (2017). Comparative assessment of SSR markers derived from different sources in genetic diversity analysis of *vigna* genotypes. *Agric Res J* 54 (4): 462-468 [NAAS rating 4.71].
- Kaur R and Kapoor Rl (2017) Accessing genetic diversity in oats based on morpho-agronomic traits. *Forage Res*. 42(4): 271-273. (NAAS rating: 4.48)
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