Division of Crop Research

Personal Details

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Research Interest

Drought, heat and climate change effect on crop plants

Research Highlights

1. Characterization of wheat genotypes for terminal heat stress tolerance
2. Impact of elevated CO_2 and temperature on growth and yield of rice-wheat cropping system under predicted climate change scenario
3. Effect of water deficit and heat stress on wheat: changes in plant physiological traits and yield attributes
4. Improved Rice Based Rainfed Agricultural System in Bihar State, India (IRRAS) Funding Agency: IRRI/STRASA
5. Evaluation and Development of drought tolerant rice for Eastern Region (STRASA Phase-III) Funding Agency: IRRI/BMGF/STRASA
6. Cereal System Initiative for South Asia Funding Agency: CIMMYT/CSISA.
7. Management of high intensity rain events in flood prone region of middle IGP for kharif crops and low temperature in Boro rice in eastern IGP (NICRA)

Memberships / Fellowships

1. Life time member of **Indian society for Plant Physiology**.
2. Member of International society for environmental information sciences
3. "**Young scientist award"** by Indian society for Plant Physiology, during National conference of Plant Physiology, at Assam Agricultural University, Jorhat, 5-7 Nov. 2009.
4. "**Young scientist award"** by Society for Upliftment of Rural Youth (SURE), National conference on Rural Livelihood Security through Innovative Agri-entrepreneurship" held at CPRI, Patna during 12th – 13th march 2016.
5. "**Award of Excellence**" during 8th to 28th march 2017, CAFT-2017 training at Division of Biochemistry, IARI, New Delhi.
6. Attented training on "Basic experimental designs and data analysis" at International Rice Research Institute (IRRI), Manila, Philippines *w.e.f.* 3-7 Feb. 2014.

Technology Developed

Publication Details

1) **Dwivedi SK.**, Basu S., Kumar S., Kumar G., Prakash V., Kumar S., Mishra JS., Bhatt BP., Malviya N., Singh GP., Arora A. (**2017**) Heat stress induced impairment of starch mobilisation regulatespollen viability and grain yield in wheat: Study in Eastern Indo-Gangetic Plains. ***Field Crops Res.*** 206:106–114.
2) **Dwivedi SK.,** Kumar S., Bhakta N., Mishra JS., Singh SK., Singh AK. (**2017**). Improvement of submergence tolerance in rice through efficient application of potassium under submergence-prone rainfed ecology of Indo-Gangetic Plain. ***Functional Plant Biol.*** 44 (9): 907-916
3) **Dwivedi SK**., Arora A., Singh VP., Sairam RK., Bhattacharya RC. (**2016**). Effect of sodium nitroprusside on

differential activity of antioxidants and expression of SAGs in relation to vase life of gladiolus cut flowers. ***Scientia Hort.*** 210: 158-165.

4) **Dwivedi SK.**, Arora A., Singh VP., Singh G.P. **(2018).**Induction of water deficit tolerance in wheat due to exogenous application of plant growth regulators: membrane stability, water relations and photosynthesis. ***Photosynthetica*.** 56 (2): 478-486.
5) **Dwivedi SK.**, Arora A., Kumar S. (**2017**). Paclobutrazol-induced alleviation of water-deficit damage in relation to photosynthetic characteristics and expression of stress markers in contrasting wheat genotypes. ***Photosynthetica*.**55: 351-359.
6) Samal SK., Rao KK., Poonia SP., Kumar R., Mishra JS., Prakash V., Mondal S.**, Dwivedi SK.,** Bhatt BP., Naik SK., Choubey AK., Kumar V., Malik RK., Donald AM.(**2017**). Evaluation of long-term conservation agriculture and crop intensification in rice-wheat rotation of Indo-Gangetic Plains of South Asia: Carbon dynamics and productivity**.** ***European J. Agron.*** 90: 198-208.
7) **Dwivedi S.K**., Singh V.P., Singh G.P. and Arora A. (2012). Combined effect of cytokinin, paclobutrazol and ascorbic acid on nitrogen metabolism and yield of wheat under water deficit stress condition. Indian journal of Plant Physiol. 17: 259-267.
8) Mondal S., Kumar S., Haris A., **Dwivedi SK.,** Bhatt BP., Mishra JS. (2016) Effect of different rice establishment methods on soil physical properties in drought-prone, rainfed lowlands of Bihar, India. ***Soil Res.*** 54 (1): 997-106.
9) Basu S., Giri RK., Benazirl., Kumar S., Rajwanshi R., **Dwivedi SK.**, Kumar G**.(2017)** Comprehensive physiological analyses and reactive oxygen species profiling in drought tolerant rice genotypes under salinity stress. ***Physiol. Mol. Biol. Plants.*** 23(4): 837-850.
10) Prakash V., **Dwivedi SK.,** Kumar S., Mishra JS., Rao KK., Singh SS., Bhatt BP. (**2017**) Effect of elevated CO_2 and temperature on growth and yield of wheat grown in sub-humid climate of eastern Indo-Gangetic Plain (IGP). ***Mausam.*** 68: 499-506.
11) Kumar Santosh, **Dwivedi S.K**., Elanchezhian R., Singh S.S., Singh O.N., Arora A and Bhatt B.P. (2013). Influence of aerobic condition on Physiological traits and yield attributes of rice genotypes under rainfed low land ecosystem. Indian J. Plant Physiol. 18: 263-269
12) **Dwivedi SK.,** Kumar S., Prakash V., Mishra JS., Kumari S. **(2017).** Influence of elevated CO_2 and temperature on physiological traits and yield attributes of heat tolerant wheat genotype Halna grown inside open top chambers. ***Ind. J. Plant Physiol***. 22: 94-100.