

Bio-Data of Dr. Kiran P. Bhagat

Name : Dr Kiran P. Bhagat

Designation : Scientist (Plant Physiology)

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Higher Degree : Ph.D. in Plant Physiology from IARI, New Delhi.

Birth Date : 29-03-1979

Research Interest : Photosynthesis, Abiotic Stresses, Climate change and Phytohormones

Project Details : **Institute Projects:**

- Physiological and Biochemical Basis to Improve the Shelf Life of Tender Coconut. (Principal Investigator)
- Management strategies for improving the productivity of coconut. (Co-Principal Investigator)
- Impact of climate change on physio-biochemical behaviour and hormonal regulations in soybean (*Glycine max*) and *rabi* sorghum (*Sorghum bicolor*). (Principal Investigator)
- Techniques to obviate edaphic stresses in orchards grown on shallow basaltic soils. (Co- Principal Investigator)
- Monitoring and quantifying coupled soil-water atmospheric stresses in soybean-*rabi* sorghum genotypes: Index based approach for crop water management. (Co- Principal Investigator)
- Evaluation of Effects of Temperature and Soil Moisture Stress on Performance of Different Wheat Genotypes under Varying Soil Types. (Co- Principal Investigator)
- On farm trial for drought stress management in muskmelon (*Cucumis melo* L.). (Co- Principal Investigator)
- Studies on physiological disorders of citrus fruits. (Principal Investigator)
- Studies on photosynthetic efficiency and light saturation points of commercial *Citrus* spp. (Principal Investigator)
- Abiotic stress management in *Citrus* spp. (Co- Principal Investigator)
- Evaluation on dynamics of flowering and fruiting in citrus. (Co-Principal)Investigator.
- Evaluation of *Citrus* rootstocks for improving productivity and quality of *Citrus* fruits. (Co- Principal Investigator)

External Projects:

- Network Project on Climate Change (NICRA Project). (Co- Principal

Investigator)

- NICRA-CGS Project on “Innovative strategies for climate resilient Citriculture. (Co- Principal Investigator)
- NHB Funded Project on “Demonstration of mechanical pruning, training, spraying and cultivation technology for increasing the productivity of Nagpur mandarin orchards in Vidarbha region of Maharashtra. (Co-Principal Investigator)

Research Publications:

1. Papers in Research Journals:

- **Kiran P. Bhagat**, S.K. Bal, Yogeshwar Singh, S. Potekar, Sunayan Saha, P. Ratnakumar, G.C. Wakchaure and P.S. Minhas (2017). Effect of reduced PAR on growth and photosynthetic efficiency of soybean genotypes. *Journal of Agrometeorology*, Vol **19** (1): 1-9.
- Babasaheb B. Fand , Mahesh B. Gaikwad, Nitin T. Sul, Mahesh Kumar, **Kiran P. Bhagat**, Santanu K. Bal, P.S. Minhas (2017). Population dynamics of soybean stem fly *Melanagromyza sojae* Zehntner (Diptera: Agromyzidae) and its parasitoids in the Maharashtra State of India. *International Journal of Tropical Insect Science* (In Press). (Acceptance for publication MS-IJT-3985)
- Archana Khewle Khadse, B. J. Jadhao and **Kiran P. Bhagat** (2017). Effect of nitrogen and potassium fertilisation on growth and seed yield of onion (*Allium cepa* cv. Akola Safed). *Indian Journal of Fertilisers*, Vol **13** (5): 44-48.
- Sunayan Saha, S. K. Bal and **Kiran P. Bhagat** (2016). Fluxes and production efficiency of irrigated wheat ecosystem under edaphic constraints of western Maharashtra plateau: A Micrometeorological Investigation. *Journal of Agrometeorology*, Vol **18** (2): 175-183.
- Archana Khadse, B.J. Jadhao and **Kiran P. Bhagat** (2015). Role of macronutrients on quality and storability of Akola safed onion seed, *Journal of Soils and Crops*, **25** (2): 320-324.
- P. Suresh Kumar, Y. Singh, D.D. Nangare, **Kiran P. Bhagat**, M. Kumar, P.B. Taware, Anjali Kumari and P.S. Minhas (2015). Influence of growth stage specific water stress on the yield, physico-chemical quality and functional characteristics of tomato grown in shallow basaltic soils, *Scientia Horticulturae*, **197**: 261–271.
- D. V. Patil and **Kiran P. Bhagat** (2014). Effect of water stress at critical growth stages in drip irrigated muskmelon (*Cucumis melo* L.) of semi-arid region of Western Maharashtra, India, *Plant Archives*, **14**(1): 161-169.
- **Kiran P. Bhagat**, Sairam R K, Deshmukh P S and Kushwah S R (2011). Biochemical Analysis of Stem in Lodging Tolerant and Susceptible Wheat (*Triticum aestivum* L.) Genotypes under Normal and Late Sown Conditions. *Indian Journal of Plant Physiology*, **16** (1): 68-74.
- **Kiran P. Bhagat** and Chetti M B (2009). Influence of Sulphur and Magnesium on Bulb Yield and Biochemical Parameters in Onion. *Indian Journal of Horticulture*, **66** (2): 215-219.
- Kumar R A, Deshmukh P S, Singh T P, Kushwaha S R and **Kiran P. Bhagat** (2008). Superoxide Dismutase in Chickpea Genotypes under High Temperature. *Indian Journal of Plant Physiology*, **13** (1): 88-90.
- Kushwaha S R, Deshmukh P S, Singh T P and **Kiran P. Bhagat** (2006). Effect of planting time on physiological characters and yield attributes of wheat (*Triticum aestivum*) genotypes. National Symposium on Conservation Agriculture and Environment, BHU, Varanasi, pp. 31-32.

2. Promising Technology/ Patent:

- Pasala R K, Singh Y, Kumar P S, **Kiran P. Bhagat**, Nangare D D, Taware P B and Minhas P S (2015). A bioregulator- orhto silicic acid- a ray of hope after hailstorm in watermelon field, *ICAR NEWS: A Science and Technology Newsletter*, **21**(1): 2-3.
- Patil D V, **Kiran P. Bhagat**, Rane J and Minhas P S (2014). Water stress management in muskmelon, *ICAR NEWS: A Science and Technology Newsletter*, **20**(1): 1-2.

3. Books:

- **Kiran P. Bhagat**, R. K. Pasala and Y. Singh (Eds) (2015). Challenges and prospective of plant abiotic stress, Volume-II. Today and Tomorrow's Printers and Publishers {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- R. K. Pasala, **Kiran P. Bhagat** and Y. Singh (Eds) (2015). Challenges and prospective of plant abiotic stress, Volume-I. Today and Tomorrow's Printers and Publishers {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.

4. Book Chapters:

- **Bhagat K P**, Pasala R K, Singh Y, Kumar P S, Jondhale P, Jondhale A, Singh T, Narwade A V, Kashyap P, Taware P B, Deokate P P and Kumari A (2015). Plant tolerance to abiotic stress: A physiological approach, *In: Challenges and prospective of plant abiotic stress, Volume-I*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 1-30. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- Kumar M, **Bhagat K P**, Goyal P, Devi R and Chugh L K (2015). Role of transcription factors in abiotic stress management, *In: Challenges and prospective of plant abiotic stress, Volume-I*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 47-70. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- Singh T, Pun K B, **Bhagat K P**, Lal B, Satapathy B S, Sadawarti M J, Katara J L, Lenka S, Gautam P (2015). Abiotic Stress in Rice: Mechanism of Adaptation, *In: Challenges and prospective of plant abiotic stress, Volume-I*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 259-302. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- Narwade A V, **Bhagat K P**, Patil D V, Kumari A., Ban Y G, Thakare H S and Singh C (2015). Abiotic stress responses in sugarcane, *In: Challenges and prospective of plant abiotic stress, Volume-II*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 419-446. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- Narwade A V, **Bhagat K P**, Patil D V, Kumari A, Thakare H S, Singh C and Ban Y G (2015). Physiological and breeding approaches for abiotic stress in cotton, *In: Challenges and prospective of plant abiotic stress, Volume-II*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 497-524. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- Kumar P S, Choudhary V K , Singh Y, Nangare D D, Pasala R K, Sangeetha A, **Bhagat K P** and Taware P B (2015). Soil and water conservation measures in resource scarce dryland areas: a way to mitigate abiotic stresses in climate change scenario, *In: Challenges and prospective of plant abiotic stress, Volume-II*, Ratna kumar Pasala, Kiran Bhagat and Yogeshwar Singh (Eds), Today and Tomorrow's Printers and Publishers, pp. 525-576. {ISBN 81-7019-503-5 (India); ISBN 1-55528-360-8 (USA)}.
- **Bhagat K P**, Kumar R A, Pasala R K, Kumar S, Bal S K, and Agrawal P K (2014). Photosynthesis and associated aspects under abiotic stresses environment. *In: Approaches to plant stress and their management*, by R.K. Gaur and Pradeep Sharma. Springer publishers, pp. 191-205.

- Pasala R K, Raina S K, Kumar S, **Bhagat K P**, Singh Y and Bal S K (2014). Adaptation and Mitigation Strategies of Plant under Drought and High Temperature Stress. *In: Abiotic Stress and Climate Change* by Narendra Tuteja and Sarvajeet S. Gill. Wiley-Blackwell Publishers, Vol. 2: 421-436.
- Deshmukh P S, Kumar R A, **Bhagat K P**, Dhandapani R, Tuti M D, Prakash G, Kushwaha S R and Singh T P (2007). Strategies for improving abiotic stress tolerance in crop plants. National Seminar on Physiological and Molecular Approaches for Increasing Yield and Quality of Agricultural, Horticultural and Medicinal Plants under Changing Environment, KKV, Dapoli, pp. 1-13.

5. Abstracts Published/ Poster Presentation:

- **Kiran P. Bhagat**, S.K. Bal, Yogeshwar Singh, R.K. Pasala, Sunayan Saha and P.S. Minhas (2015). Impact of reduced PAR in determinate, semi-determinate and indeterminate soybean (*Glycine max* L.) genotypes under climate change scenario, International Plant Physiology Congress on Challenges and Strategies in Plant Biology Research, New Delhi during 11-14 December, 2015, pp. 345.
- **Kiran P. Bhagat**, S.K. Bal, P.S. Minhas, Sunayan Saha and Yogeshwar Singh (2015). Impact of photosynthetically active radiation and moisture stress on yield components in determinate, semi-determinate and indeterminate soybean (*Glycine max* L.) genotypes, ISPP West Zonal Seminar on Enhancement of Crop Productivity through Physiological Interventions, NAU, Navsari, 11th May, 2015, pp. 25-26.
- Nangare D D, Singh Y, Kumar P S, **Bhagat K P**, Kumar M, Saha S, Taware P B and Minhas P S (2015). Effect of deficit and withholding irrigation strategies at critical growth stages on WUE, yield and fruit quality of tomato (*Lycopersicon esculentum* L.). 49th Annual Convention of ISAE and Symposium on Engineering Solutions for Sustainable Agriculture and Food Processing, Ludhiana, February 23-25, 2015, pp. 197.
- Sunayan Saha, S.K. Bal, P.S. Minhas and **K.P. Bhagat** (2015). Net exchange of CO₂ over a winter wheat ecosystem in peninsular India: Biophysical and environmental controls, International Joint Conference of the AsiaFlux Workshop on Challenges and Significance of Ecosystem Research in Asia to Better Understand Climate Change, pp. 88.
- Deshmukh P S, Uprety D C, Dwivedi N, Kumar R A, **Bhagat K P**, Talwar S, Kushwaha S R and Singh T P (2007). Impact of climate change on productivity of pulses. National Symposium on Legumes for Ecological Sustainability, IIPR, Kanpur, November 3-5, pp. 93.
- Kushwaha S R, Deshmukh P S, Singh T P, **Bhagat K P** and Kumar R A (2007). Effect of temperature on productivity of wheat (*Triticum aestivum* L.) genotypes. National Seminar on Physiological and Molecular Approaches for Increasing Yield and Quality of Agricultural, Horticultural and Medicinal Plants under Changing Environment, KKV, Dapoli, Nov 29- Dec 01, pp. 65.
- **Bhagat K P**, Chetti M B and Hiremath S M (2007). Influence of sulphur and magnesium on morpho- physiological traits and keeping quality in onion (*Allium cepa* L.). National Seminar on Physiological and Molecular Approaches for Increasing Yield and Quality of Agricultural, Horticultural and Medicinal Plants under Changing Environment, KKV, Dapoli, Nov 29- Dec 01, pp. 109.
- Kumar R A, Deshmukh P S, Srivatava G C, Singh T P, Kushwaha S R, Sharma D K, **Bhagat K P**, and Tuti M D (2007). Effect of high temperature stress on in-vitro pollen viability, germination and tube growth in chickpea (*Cicer arietinum* L.) genotypes. National Seminar on Physiological and Molecular Approaches for Increasing Yield and Quality of Agricultural, Horticultural and Medicinal Plants under Changing Environment, KKV, Dapoli, Nov 29- Dec 01, pp. 214-215.
- **Bhagat K P**, Deshmukh P S, Kushwaha S R, Singh T P and Kumar R A (2007). Studies on lodging

tolerance in wheat genotypes (*Triticum aestivum* L.). National Seminar on Physiological and Molecular Approaches for Increasing Yield and Quality of Agricultural, Horticultural and Medicinal Plants under Changing Environment, KKV, Dapoli, Nov 29- Dec 01, pp. 217.

- **Bhagat K P**, Chetti M B, Hiremath S M and Koti R V (2003). Influence of sulphur and magnesium on biochemical parameters in onion (*Allium cepa* L.). National Seminar on Physiological Interventions for Improved Crop Productivity and Quality, S.V. Agricultural College, Tirupati, December 12-14, pp. 155.

6. **Awards:**

- **Best Oral Presentation Award** on Research Paper entitled “Physiological and yield response to photosynthetically active radiation and moisture stress in soybean (*Glycine max* L.) genotypes under climate change scenario” in National Seminar on “Breeding of field crops for biotic and abiotic stresses in relation to climate change” held at VNMKV, Parbhani during March 28-29, 2016 under the theme of ‘Physiological and agronomical approaches to overcome biotic as well as abiotic stress’.
- **Best Oral Presentation Award** on Research Paper entitled “Impact of photosynthetically active radiation and moisture stress on yield components in determinate, semi-determinate and indeterminate soybean (*Glycine max* L.) genotypes” in ISPP West Zone Seminar on Enhancement of Crop Productivity through Physiological Interventions held at Navsari, Gujarat on 11-05-2015.
- **Best Poster Paper award** for the poster entitled “Innovative techniques to obviate edaphic and drought stresses on pomegranate grown in shallow basaltic soils” which has been presented in the National seminar-cum-exhibition on “Pomegranate for Nutrition, livelihood security and Entrepreneurship development” during Dec 5-7, 2014 held at NRC Pomegranate, Solapur.

7. **Recognition:**

- Executive Member of Kendriya Vidyalaya, ICAR-CPCRI, Kasaragod, Kerala.
- Life Member of Indian Society for Plantation Crops.
- Life Member of Indian Society of Citriculture.
- Life Member of Indian society of Agrometeorology.