

Personal Details

Dr M.K. Mahatma

Principal Scientist

Email : Mahesh.Mahatma@icar.gov.in

Alternate Email : maheshmahatma@gmail.com

Phone :



Research Interest: Plant Biochemistry, Plant Molecular Biology, Biomolecules, Metabolomics, Nutritional and Quality evaluation

Ph.D. : Anand Agricultural University, Anand (Gujarat)

M.Sc. : Rajasthan Agricultural University, Bikaner

Joining date in ICAR (yyyy/mm/dd) : 2012-07-02

Publications (Top 10 Publications having NAAS rating 6 and above with first or corresponding author only) :

1. Rakesh Nogiya, **MK Mahatma**, Avinash Gowda H, SS Raval, V Rathod, HP Gajera, RS Tomar and Narendra Kumar (2021) Changes in expression of polyamines and ethylene biosynthesis genes in groundnut (*Arachis hypogaea* L.) genotypes during *Sclerotium rolfsii* infection. Indian Journal of Experimental Biology, 58 (7): 476-483
2. **M. K. Mahatm**, Lokesh Kumar Thawait, K. S. Jadon¹, P. P. Thirumalaisamy, S. K. Bishi, Khyati J. Rathod, Aman Verma, Narendra Kumar, B. A. Golakiya (2021) Metabolic profiling for dissection of late leaf spot disease resistance mechanism in groundnut. Physiology and Molecular Biology of Plants, 27:1027-1041
3. **MK Mahatma**, LK Thawait, KS Jadon, KJ Rathod, KH Sodha, SK Bishi, PP Thirumalaisamy, BA Golakiya (2019) Distinguish metabolic profiles and defense enzymes in *Alternaria* leaf blight resistant and susceptible genotypes of groundnut. Physiology and Molecular Biology of Plants, 25:1395–1405
4. SS. Raval, **MK Mahatma**, K Chakraborty, SK Bishi, AL Singh, KJ Rathod, JK Jadav, JM Sanghani, MK Mandavia, HP. Gajera, BA Golakiya (2018) Metabolomics of groundnut (*Arachis hypogaea* L.) genotypes under varying temperature regimes. Plant Growth Regulation 84:493–505
5. **MK Mahatma**, LK Thawait, KS Jadon, PP Thirumalaisamy, SK Bishi, JK Jadav, N Khatediya, BA Golakiya (2018) Metabolic profiles of groundnut (*Arachis hypogaea* L.) genotypes differing in *Sclerotium rolfsii* reaction. European Journal of Plant Pathology 151 (2), 463-474
6. **MK Mahatma**, LK Thawait, SK Bishi, N Khatediya, AL Rathnakumar, HB Lalwani, JB Misra (2016) Nutritional composition and antioxidant activity of Spanish and Virginia groundnuts (*Arachis hypogaea* L.): a comparative study: Journal of Food Science and Technology ,53 (5), 2279-2286
7. K Chakraborty, **MK Mahatma**, LK Thawait, SK Bishi, KA Kalariya, AL Singh (2016) Water deficit stress affects photosynthesis and the sugar profile in source and sink tissues of groundnut (*Arachis hypogaea* L.) and impacts kernel quality. Journal of Applied Botany and Food Quality 89: 98 – 104

8. SK Bishi, Lokesh Kumar, **MK Mahatma**, N Khatediya, SM Chauhan, JB Misra (2015) Quality traits of Indian peanut cultivars and their utility as nutritional and functional food. *Food Chemistry* 167:107–114
9. Pritam R. Jadhav, **Mahesh K. Mahatma**, Lalit Mahatma, Sanjay Jha, Vipul B. Parekh, Vikas Khandelwal (2013) Expression analysis of key genes of phenylpropanoid pathway and phenol profiling during *Ricinus communis*–*Fusarium oxysporum* f. sp. ricini interaction. *Industrial Crops and Products* 50, 456-461
10. SD Mhaske, **Mahesh Kumar Mahatma**, S Jha, P Singh, L Mahatma, VB Parekh, T Ahmad (2013) Castor (*Ricinus communis* L.) Rc-LOX5 plays important role in wilt resistance. *Industrial Crops and Products* 45, 20-24

Patent / Technologies / Varieties / Methodologies / System etc. (Five only) :

1. Characterized groundnut germplasm for oil, protein, fatty acids, sugars and bioactive compounds.
2. Identified trait specific cultivars of groundnut.
3. Identified metabolite markers for stem rot (Thymol-beta-d-glucopyranose, scopolin, hydroquinone and cinnamic acid), alternaria leaf blight (hexadecanoic acid, arabinofuranose, 2-butendioic acid, and linoleic acid) and most significant pathways for late leaf spot resistance of groundnut.
4. Specific metabolites for heat-stress tolerance in groundnut were identified using metabolomics analysis.
5. Identified Lox-5 gene for fusarium wilt resistance in castor.

No. of Students Guided :M.Sc : 07Ph.D :4

Awards / Recognitions / Fellowship (Five only) :

- Qualified ASRB (ICAR) NET-2001 and 2006.
- Awarded by ICAR SRF for Ph.D. in Biochemistry (Pl.Sc) during 2003 programme.
- Awarded by R.D. Asana Gold medal award-2015 by Indian Society of Plant Physiology.
- Awarded by Fellow of Indian Society of Agricultural Biochemist (FISAB) in 2016.

International exposure:

International training on “Metabolic engineering of cyanobacteria for ethanol production using synthetic biology” (90 days, 24.3.2010-22.6.2010) at University of Illinois, USA sponsored by NAIP-I, ICAR, NEW DELHI

Ongoing research projects (institutional / external funded -as PI or CCPI):