Name	:	DR.MAHESH KUMAR MAHATMA
Date of Birth	:	23.10.1976
Position/Designation	:	Senior Scientist, since 02.07.2012
Address	:	Biochemistry Section, Directorate of Groundnut Reseach,ICAR, Post Box No. 5, Ivnagar Road, Junagadh-362001, Gujarat, India
Previous Job		Assistant Professor at Department of Plant Molecular Biology and Biotechnology, Navsari agricultural University, Navsari, Gujarat (from:15.01.2007 to 30.06.2012)
Discipline and Specialization	:	Biochemistry (Plant Sciences), Biochemical and Molecular basis of biotic and abiotic stress tolerance in plants

Awards/honours/additional qualifications

- 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 Biochemist (FISAB) in 2016.

International training

- Metabolic engineering of cyanobacteria for ethanol production using synthetic biology (90 days) at University of Illinois, USA sponsored by NAIP-I, ICAR, NEW DELHI

National training

- **Recent advances in molecular identification of agriculturally important microorganisms (21 days) at NBAIM Mau Nath Bhanjan**
- **Advanced techniques in plant biochemistry and molecular biology (21 days) at caft, division of biochemistry IARI, New Delhi**

Contribution to the scientific advancement

- Characterized groundnut germplasm for oil, fatty acids and sugars
- Elucidated groundnut metabolome during stem rot and leaf spot and Alterneria diseases
- Determined biochemical constituents and phytohormones of pseudo-stem of banana as a member of NAIP sponsored project on "Value chain utilization of banana pseudo-stem" (2008-2012) at NAU, Navsari.
- Acted as PI in GSBTM sponsored project on "Identification,...of RcPCS (*Ricinus communis Phtochelatin Synthase*) gene in *Ricinus communis*" from March, 2011 to June,2012.
- Characterized pearl millet and castor genotypes for downy mildew and wilt resistance, respectively.
- Guided 5 M.Sc. and 1 Ph.D students of Plant Biotechnology (2007-2012).
- Guided 1 M.Sc. student of Plant Molecular Biology and Bitechnology and 1 Ph.D. student of Biochemistry

Reviewer of International/National Journal

Reviewer for following International/National Journals (from 2012)

- European Journal of Plant pathology
- Industrial Crops and Products
- Journal of Plant Physiology
- Food Chemistry
- Journal of Food Science and Technology
- Agricultural Science Digest
- Legume Research

List of publication in international and national journals

1. **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
2. Nidhi Radadiya, Vipul B Parekh, Bhavika Dobariya, Lalit Mahatma, **Mahesh K Mahatma**.2016. Abiotic stresses alter expression of S-Adenosylmethionine synthetase gene, polyamines and antioxidant activity in pigeon pea (Cajanus cajan L.). Legume Research-An International Journal,. 39: 905-913
3. R Jain, S Jha, **MK Mahatma**, A Jha, GN Kumar.2016.Characterization of arsenite tolerant Halomonas sp. Alang-4, originated from heavy metal polluted shore of Gulf of Cambay. Journal of Environmental Science and Health, Part A, 51(6):478-86
4. 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
5. 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
6. CV Kapadia, **MK Mahatma**, MJ Parekh, N Patel, RS Tomar.2015. Identification of resistance gene analogs (RGAs) from highly wilt resistant castor (*Ricinus Communis* L.) genotype. Research Journal of Biotechnology 10:16-26
7. K A Kalariya, A L Singh, N Goswami, D Mehta, **M K Mahatma**, B C Ajay, K Chakraborty, P V Zala, V Chaudhary, C B Patel. 2015. Photosynthetic characteristics of peanut genotypes under excess and deficit irrigation during summer. Physiology and Molecular Biology of Plants 21 (3), 317-327
8. RM Swami, **MK Mahatma**.2015.Study of antioxidant enzymes activity in wilt resistant and susceptible pigeonpea genotypes during *Fusarium udum* infection. Trends in Biosciences 8 (2), 575-582
9. RM Swami, **MK Mahatma**, MJ Parekh, KA Kalariya, L Mahatma.2015. Alteration of metabolites and polyphenol oxidase activity in wilt resistant and susceptible pigeonpea genotypes during *Fusarium udum* infection. Indian Journal of Agricultural Biochemistry 28 (1), 18-23
10. KA Kalariya, RR Shah, **MK Mahatma**. 2015. Response of exogenous abscisic acid on photosynthesis in contrasting rice genotypes under salinity shock. Electronic Journal of Environmental Sciences 8, 11
11. R Jain, S Jha, H Adhikary, P Kumar, V Parekh, A Jha, **MK Mahatma**, GN Kumar. 2014. Isolation and molecular characterization of arsenite tolerant *Alishewanella* sp. GIDC-5 originated from industrial effluents. Geomicrobiology Journal. 31 (1), 82-90
12. R.K. Kalaria, Digvijay Chauhan, **MK Mahatma**, L Mahatm. **2014**. Identification of RAPD and ISSR makers for resistance against mungbean yellow mosaic virus in mungbean (*Vigna radiata* L.) under south Gujarat agro climatic condition of India. The Bioscan 9 (3): 1177-1182
13. KA Kalariya, **MK Mahatma**. 2014. Response of Exogenous Abscisic Acid on Antioxidant Enzymes in Rice under Salinity Shock. Indian Journal of Agricultural Biochemistry 27 (2), 111-115.
14. MJ Parekh, **MK Mahatma**, RV Kansara, DH Patel, S Jha, DA Chauhan.2014. Agrobacterium Mediated Genetic Transformation of Pigeon Pea (*Cajanus cajan* L. Millsp) using Embryonic

Axes for Resistance to Lepidopteron Insect. Indian Journal of Agricultural Biochemistry 27 (2), 176-179

15. N Patel, R Kansara, **M Mahatama,** L Mahatma.**2014**. Optimization for the most organogenic responsive combinations of plant growth regulators through in vitro regeneration of tomato cv pusa dwarf. Journal of Cell & Tissue Research 14: 4357-4362

16. MJ Parekh, **MK Mahatma**, CV Kapadia. **2014.** In vitro regeneration of pigeon pea {*Cajanus cajan* (L.) millsp.} genotype gt-102 using apical meristem. Journal of Cell and Tissue Research.14: 4099-4103

17. PC Arade, P Singh, **M Mahatma**. **2014**.Characterization of *Colletotrichum falcatum* went. causing red rot in sugarcane saccharum complex. The Bioscan 9 (1), 375-379

18. Charles Mugisa , Harshal P Patel, **Mahesh Mahatma,** Lalit Mahatma.**2014**. Molecular characterization of infecting mungbean in south Gujarat Mungbean yellow mosaic virus. Mycol Plant Pathol 44:214-218

19. 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

20. RV Padaliya, KP Suthar, D Singh, **MK Mahatma**, VR Patil**.** 2013**.** Marker assisted characterization of chickpea genotypes for wilt resistance African Journal of Biotechnology 12 (50), 6907-6912

21. SK Bishi, L Kumar, MC Dagla, **MK Mahatma**, AL Rathnakumar, HB Lalwani, JB Misra.2013. Characterization of Spanish peanut germplasm (*Arachis hypogaea* L.) for sugar profiling and oil quality. Industrial Crops and Products 51, 46-50

22. PR Jadhav, **MK Mahatma**, S Jha, L Mahatma, VB Parekh, SK Jha. 2013. Changes in phenylpropanoid pathway during compatible and incompatible interaction of *Ricinus communis-Fusarium oxysporum* f. sp. *ricini*. Indian Journal of Agricultural Biochemistry 26 (1), 56-60

23. RV Kansara, S Jha, SK Jha, **MK Mahatma**.**2013.** An efficient protocol for in vitro mass propagation of fusarium wilt resistant castor (*Ricinus communis* L.) Parental line skp-84 through apical meristem. The Bioscan 8 (2), 403-408

24. H Patel, R Kalaria, **M Mahatma**, DA Chauhan, L Mahatma. 2013.Physiological and biochemical changes induced by Mungbean yellow mosaic virus (MYMV) in mungbean [*Vigna radiata* (L.) wilczek]. Journal of Cell & Tissue Research 13 (3), 3927 – 3930.

25. R Kalaria, MK Mahatma, L Mahatma. 2013. Molecular characterization of begomovirus infecting *Abutilon glaucum* in south Gujarat region. The Bioscan 8 (1), 105-107.

26. VS Srivashtav, CV Kapadia**, MK Mahatma**, SK Jha, S Jha, T Ahmed.2013 Genetic diversity analysis in elite Date palm (*Phoenix dactylifera*) genotypes grown in kutch region of India. Emirates Journal of Food and Agriculture 25 (11), 907-915

27. 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

28. Somnath D. Mhaske, **Mahesh Kumar Mahatma**, Sanjay Jha, Taslim Ahmad. **2013**. Polyamine metabolism and lipoxygenase activity during *Fusarium oxysporum* f. sp. *ricini* -Castor interaction. Physiology and Molecular Biology of Plants 19 (3), 323-331

29. BD Mangave, A Singh, **MK Mahatma**. 2013. Effects of different plant growth regulators and

chemicals spray on post-harvest physiology and vase life of *Heliconia inflorescence* cv. *Golden Torch*. Plant Growth Regulation, 69: 259–264.

30. VH Solanki, Vikas Khandelwal, DH Patel **MK M**ahatma Suman Jha. 2013. Optimization of gene transfer in cotton via *Agrobacterium tumefaciens*: an assessment of factors influencing the efficiency of gene transfer mechanisms. Journal of Cotton Research and Development 27 (1): 1-6

31. KD Shinde, AV Narwade, HS Thakare, **MK Mahatma. 2013**. Effect of moisture regimes on biochemical traits, yield and yield components in chickpea (*Cicer arietinum* L.) genotypes. Bioinfolet, 10 (4):1402-1404.

32. CV Kapadia, **MK Mahatma**, V Shrivastava, T Ahmad, RT Desai. **2012**. Defense response of resistant and susceptible genotypes of castor (*Ricinus communis* L.) to wilt disease. Archives of Phytopathology and Plant Protection 46 (2): 180-192

33. L Mahatma, **MK Mahatma**. **2012**. First report of a variant of Tomato leaf curl Bangladesh virus infecting Gaillardia. New Disease Reports, 26, 4.

34. GK Mittal, **MK Mahatma**, R Bhatnagar, N Rehann. **2012**. Optimization of the transesterification process for production of biodiesel from *Jatropha curcas* L. oil. Indian Journal of Agricultural Biochemistry 25 (2): 134-136.

35. MK Mahatma, R Bhatnagar, RK Solanki GK Mittal, RR Shah.**2011.** Characterization of Downy Mildew Resistant and Susceptible Pearl Millet (Pennisetum Glaucum (L.) R.Br.) Genotypes Using Isozyme, Protein, RAPD and ISSR Markers. Archives of Phytopathology and Plant Protection **44**(20), 1985-1998.

36. VH Solanki, V Khandelwal, D H Patel, **M K Mahatma**.**2011.** Agrobacterium mediated in planta transformation of *Gossypium hirsutum* cv. *G.Ct.10***.** Indian Journal of Plant Physiology **16** (3 and 4):303-308.

37. MK Mahatma, R Bhatnagar, GK Mittal, L Mahatma.**2011**. Antioxidant metabolism in pearl millet genotypes during compatible and incompatible interaction with downy mildew pathogen. Archives of Phytopathology and Plant Protection **44**(9):911-924

38. M K Mahatma, R. Bhatnagar, G.K. Mittal and L.Mahatma. **2011.** Phenol metabolism in downy mildew resistant and susceptible genotypes of pearl millet. Archives of Phytopathology and Plant Protection **44**(7):623-636

39. RV Kansara, Sanjay Jha, **MK Mahatma**, SK Jha.**2010.** *In vitro* regeneration of castor plant from apical meristem. Journal of Oilseed Research 27: 30-32

40. MK Mahatma, R Bhatnagar, P Dhandhukia VR Thakkar. **2009.** Variation in metabolites constituent in leaves of downy mildew of resistant and susceptible genotypes of pearl millet. Physiology and Molecular Biology of Plants **15**(3):249-255

41. MK Mahatma, V Khandelwal, SK Jha, V Kumar, RRShah. **2009.** Genetic diversity analysis of elite parental lines of cotton using RAPD, ISSR and Isozyme Markers. Indian Journal of Plant Physiology **14**(2):105-110

42. MK Mahatma, R Bhatnagar, RK Solanki, GK Mittal. **2009**. Effect of Seed Soaking Treatments on Salinity Induced Antioxidant Enzymes Activity, Lipid Peroxidation and Free Amino Acid Content in Wheat (*Triticum aestivum* L.) Leaves. Indian Journal of Agricultural Biochemistry **22**:108-112

43. MKMahatma R Bhatnagar, PRawal.**2008** Enzymatic changes and proline level in leaves of downy mildew resistant and susceptible pearl millet genotypes. Journal of Mycology and Plant Pathology **38**:277-81

44. MK Mahatma, R Bhatnagar, R K Solanki. GK Mittal.**2007.** Effect of seed soaking treatments

on salt induced biochemical contents and polypeptide pattern of wheat (*Triticum aestivum* L.) leaves. Indian Journal of Agricultural Biochemistry **20: 73-77**

45. RN Kumawat, PS Rathore, NS Nathawat **M Mahatma**.**2006.** Effect of sulphur and iron on enzymatic activity and chlorophyll content of Mungbean (*Vigna radiata* L.). Journal of Plant Nutrition, 29: 1-17.

46. HE Patil, **MK Mahatma**, NJ Patel, R. Bhatnagar, GC Jadeja. **2005.** Differential response of pearlmillet [*Pennisetum glaucum* (L.)R. Br] hybrids to water stress in relation to anti-oxidant enzymes activity and proline. Indian Journal of Plant Physiology **10** (4) (NS):344-348

47. **MK Mahatma,** GC Nanawati, HR Mehta**. 2002**. Effect of cob piece size, kernel position and MS salt, sucrose concentration during in vitro kernel dvelopment in maize (*Zea mays* L.). Journal of Phytological Research **15**(2): 173-77.

48. **MK Mahatma**, GC Nanawati, V. Sharma and H. R. Mehta.**2002.** Effect of free radical quenchers and paraquat on lipoxygenase, protease activity and total soluble sugar accumulation during in vitro maize (*Zea mays* L.) kernel development. Journal of Phytological Research **15**(2): 191-195.

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49. **M.K. Mahatma**, A.L. Singh, Lokesh Kumar and J.B. Misra. 2014.Recent Advances in Alteration of Fatty Acid Composition and Protein Quality of major Edible Oil Seed Crops.*In: Recent Advances in Crop Physiology*, Vol.-1 (Editor: Amrit Lal Singh), Daya Publishing House, New Delhi, pp.359-393.

50. Anita Mann, Sujit Kumar Bishi, **Mahesh Kumar Mahatma**, and Ashwani Kumar.2015. Metabolomics and salt stress tolerance in plants *In: Managing Salt Tolerance in Plants: Molecular and Genomic Perspectives*. (Editors: S. H. Wani and M. A. Hossain) 251-266, CRC Press.

51. **M.K. Mahatma** and L.Mahatma.2015. Soil Suppressive Microorganisms and Their Impact on Fungal Wilt Pathogens. *In: Organic Amendments and Soil Suppressiveness.in Plant Disease Management, Soil Biology 46*, M.K. Meghvansi, A. Varma (eds.), Springer International Publishing Switzerland 2015.

52. L. Mahatma, **M.K. Mahatma**, JR Pandya, RK Solanki, VA Solanki.2016. Epidemiology of Begomoviruses. *In: A Global Perspective. Plant Viruses: Evolution and Management*. (Editors: R.K. Gaur et al.) 171-188, Springer Singapore

Abstracts Published in Seminar/Symposia: 25

Number of Books Published: 3