

Bio-data: Dr. C. Mohan**Division/Section:** Division of Crop Improvement

A. Personal Information:			
1.	Name	:	Dr. C. Mohan
1. a	Qualification	:	M. Sc (Ag.), Ph.D.,
2.	Designation	:	Principal Scientist (Plant Breeding)
3.	Address	:	U220, Vinod Bhavan, Maruthamkuzhi, Trivandrum-30
4.	Phone Numbers	:	Res:2363950, Intercom:115, Mobile: 09495201553
5.	Email	:	cmsan99@gmail.com
6.	Countries visited	:	USA and Belgium
B. Professional Information			
1.	Area of specialization	:	Plant Molecular Markers
2.	Area of Interest	:	Marker Aided Selection, Plant Molecular Biology

3. Number of Institute projects completed:

		Principal Investigator
1.	:	Breeding for homogeneous superior seedling progenies in TCS programme
2.	:	Collection, conservation, cataloguing and evaluation of sweet potato germplasm
3.	:	Isolation and characterization of stress responsive genes in cassava
4.	:	Marker Aided Selection for CMD resistance using Association Mapping
5.	:	Breeding early maturing, weevil resistant, high starch, high carotene orange-fleshed sweet potato (OFSP) lines for consumption and industrial application
6.	:	Collection, conservation, cataloguing and evaluation of minor tuber crops germplasm
		Co-Principal Investigator
7.		Development of management information system on tuber crops
8.	:	Varietal improvement in cassava for cassava mosaic disease resistance, yield and quality.
9.	:	Varietal Improvement of cassava for CMD resistance, earliness, high starch and keeping quality
10.	:	In vitro cultures for germplasm conservation and production of somaclonal variants in Tuber crops
11.	:	Collection, conservation, cataloguing and evaluation of minor tuber crops germplasm
12.	:	Molecular studies on cassava mosaic disease –diagnosis, symptom expression and disease resistance
13.	:	Development and application of statistical machine learning techniques for computational genomics and microarray data analysis in tuber crops

4. Number of Institute projects being handled

		Principal Investigator
1.	:	Pyramiding of genes for cassava mosaic disease (CMD) resistance in cassava through molecular breeding
		Co-Principal Investigator
2.	:	Varietal Improvement of cassava for CMD resistance, earliness, high starch and keeping quality
3.	:	Comparative global gene expression analysis in CMD resistant, recovery and susceptible cassava genotypes
4.	:	<i>In silico</i> analysis of transcriptome data generated through deep sequencing of RNA from different tropical tuber crops

5. Number of external funded projects completed: 1

		Co-Principal Investigator
1.	:	Evaluation of orange-fleshed sweet potato and mapping of genetic loci associated with β -carotene

6. Number of external funded projects being handled: 1

		Principal Investigator
1.	:	DBT project: Isolation of differentially expressing genes in CMD resistance parent (MNga1) by suppression subtractive Hybridization (SSH) using cDNA library.

7. Number of students guided for a. Ph.D: -Nil- ; M. Sc: 10

8. Number of students being guided for a. Ph.D: 2; M. Sc: 2

8. a. Information about the students under your guidance:

Name of the student	Course undergoing (Ph.d/M.Sc)	Title of the project/Thesis	Email address
Aswathy G.H. Nair	Ph.d	Studying the genetics of flesh colour variation in sweet potato using molecular markers.	aswathyghnair07@gmail.com
Vidya P	Ph.d	Identification of candidate genes responsible for CMD resistance in cassava and mapping the CMD resistance using SSR markers	vidyapemail@gmail.com

9. Information on guideship:

Guideship for Ph.D/ M.Phil/ M.Sc	University	Subject
Ph.D guide	Manonmaniam Sundarnar University, Tirunelveli, Tamil Nadu	Biotechnology
Ph.D guide	University of Kerala, Trivandrum, Kerala	Biotechnology

10. Number of Research Papers: 18

- a. Ramamoorthy, K., C. Mohan, N. Natarajan and A.Lakshmanan. 1997. Seed biofortification with *azospirillum* for improvement of seedling vigour in Rice (*Oryza sativa*). *Advances in Plant Science*, 12(1):315-316.
- b. Mohan, C., G. Kandasamy and N. Senthil. 1999. Exploitation of heterosis and selection of superior combiners in pearl millet. *Annals of Agricultural Research*, 20(1): 91-93. (India)
- c. Mohan, C., P. G. Rajendran and S. G. Nair. 2001. Transient male fertility in cassava 'Ambakadan'- A male sterile line. *Journal of Root Crops*, 27:50-51. India
- d. Mohan, C., G. Kandasamy and N. Senthil. 2002. Studies on combining ability in pearl millet (*Pennisetum glaucum* (L) Leeke). *Madras Agricultural Journal*, 89:672-674. India
- e. Rajendran, P. G., C. Mohan and J. Sreekumar. 2004. Breeding true cassava seed progeny for mosaic disease (CMD) resistance. *Gene Conserve*, 11: 154-186.. Brazil
- f. Rajendran, P. G., C. Mohan and J. Sreekumar. 2005. Standardisation of true cassava seed (TCS) programme with special emphasis on more homogeneous, CMD resistant progenies. *Euphytica*, 142: 13-22. Netherlands
- g. Raghu, D., N. Senthil, T. Saraswathi, M. Ravindaran, R. Gnanam, R. Venkatachalam, Shanmugasundaram P. and Mohan, C. 2008. Morphological and Simple Sequence Repeats (SSR) based fingerprinting of South Indian cassava germplasm. *International Journal of Integrative Biology*, 1(2):141-149.
- h. Angel, G. R., Makesh Kumar, T. Mohan, C, Vimala, B and Nambisan. 2008. Genetic diversity analysis of starchy *Curcuma* species using RAPD markers. *Journal of Biochemistry and Biotechnology*, 17: 173-176. India
- i. Binu Hariprakash, Vimala, B. and Mohan, C. 2011. Efficient DNA isolation and electrophoretic methods for molecular analysis of sweet potato. *Gene Conserve*, 10(40): 87-109.
- j. Raghu, D., N. Senthil., M. Raveendran, K. Nageswari, G. Karthikeyan, L. Pugalenthi, G. J. Janavi, R. Jana Jeevan and C. Mohan. 2011. Starch content and cassava mosaic disease genetic diversity with relation to yield in South Indian cassava germplasm. *Journal of Crop Science and Biotechnology*, 14:179-189.
- k. Raghu, D., N. Senthil., M. Raveendran, K. Nageswari, G. Karthikeyan, L. Pugalenthi, G. J. Janavi, R. Jana Jeevan and C. Mohan. 2012. Molecular Studies on the Transmission of Indian Cassava Mosaic Virus (ICMV) and Sri Lankan Cassava Mosaic Virus (SLCMV) in Cassava by Bemisia tabaci and Cloning of ICMV and SLCMV Replicase Gene from Cassava. *Molecular Biotechnology*, 53: 150-158.
- l. **Mohan, C.**, P. Shanmugasundaram, M. Maheswaran, N. Senthil, Raghu. D and Unnikrishnan, M. 2013. Mapping new genetic markers associated with CMD resistance in cassava (*Manihot esculenta* Crantz) us simple sequence repeat markers. *Journal of Agricultural Science*, 5 (5): 57-65.

- m. **Mohan, C.**, P. Shanmugasundaram and N. Senthil. 2013. Simple Sequence Repeat (SSR) markers for identification of true hybrid progenies in cassava. Bangladesh Journal of Botany, 42 (1): xx-xx. (Accepted for publication).
- n. Hariprakash B., M. Unnikrishnan and **C. Mohan**. 2010. *In vitro* propagation and regeneration studies in *Curculigo orchoids* Garten., a medicinal and endangered plant species. J. Root Crops, 36(2): 149-154.
- o. Unnikrishnan, M., B. Hariprakash and **C. Mohan**. 2010. Micorpropagation and *in vitro* conservation of *Tacca pinnatifida*. Forst. J. Root Crops, 36(2): 155-160
- p. Unnikrishnan, M., B. Hariprakash and **C. Mohan**. 2010. *In vitro* plantlet regeneration and mico-rhizome induction in three species of *Kaemferia*. J. Root Crops, 36(2): 161-171.
- q. Binu Hariprakash, Vimala, B. and Mohan, C. 2011. Efficient DNA isolation and electrophoretic methods for molecular analysis of sweet potato. Gene Conserve, 10(40): 87-109.
- r. Murukarthick J, Sreedevi GS, Senthil N, Raveendran M, Raghu D, Jana Jeevan R, Sakthi AR, Nageswari K, Pugalenthil L, C. Mohan. 2011. A web accessible resource for investigating cassava phenomics and genomics information: BIOGEN BASE. Bioinformation, 6(10): 391-392.

11. Number of Book/Book Chapters: 4

1. **Mohan, C.** Tropical Tuber Crops. (ed.) H.P. Singh, V.A. Parthasarathy and K. Nirmal Babu. 2011. Advances in Horticulture Biotechnology, - Molecular Markers and Marker Assisted Selection - Vegetables, Ornamentals and Tuber Crops (Volume IV), pp 187-230, Westville Publishing House, New Delhi.
2. **Mohan, C** and M. Unnikrishnan. Tropical Tuber Crops. (ed.) H.P. Singh, V.A. Parthasarathy and K. Nirmal Babu. 2011. Advances in Horticulture Biotechnology, - transgenics - Vegetables, Ornamentals and Tuber Crops (Volume IV), pp 444-494, Westville Publishing House, New Delhi.
3. **Mohan, C** and Aswathy G. H. Nair. 2012. Characterization of genes and promoters, Transformation and Transgenic Development in Sweet potato. Book Chapter published by Global Science Book. Fruits, Vegetable and Cereal Science and Biotechnology, 6: 43-56.
4. **Mohan, C.**, Aswathy G. H. Nair and Samiran K. Naskar. 2012. Molecular Mapping and genetic diversity studies in Sweet potato. Book Chapter published by Global Science Book. Fruits, Vegetable and Cereal Science and Biotechnology, 6: 57-64.

12. Number of Technical Bulletins: 1

13. Consultancies offered: ----

14. Technologies developed:

i. Varietal release / Patents

A cassava variety resistant to cassava mosaic disease released for Tamil Nadu farmers during 2007 named as **Sree Padmanabha** (MNga-1).

ii. New cassava clone: CMR100

Cassava improvement program, new promising clone (CMR100) identified with CMD free, middle branching, uniform tuber shape (cylindrical), light yellow flesh, non-bitter and high drymatter (43%). The uniform, long cylindrical shape of the tuber is ideal for fried chip making. The peeling of the tuber is easy, raw tuber has sweet taste and having very good cooking quality.

15. Patents/Copyrights obtained: ----

16. Any other information: ----