



### Biodata of Dr. Madhusudhan.K.N.

1. Name and full correspondence address: **Dr. Madhusudhan.K.N.**  
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4. Date of Birth 31.03.1977
5. Gender (M/F/T) Male
6. Category Gen/SC/ST/OBC OBC
7. Whether differently abled (Yes/No) NO
8. Education (Post Graduation onwards & Professional Career)

Name of the University	Degree Passed	Year of Passing	Subject	Class/Div.
Mysore University, Mysore	M.Sc.	1999	Sericulture	1 <sup>st</sup> (2 <sup>nd</sup> Rank)
Mysore University, Mysore	M.Phil	2000	Seed Technology	1 <sup>st</sup>
Mysore University, Mysore	Ph.D	2009	Biotechnology	-

9. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

**Ph.D: Biotechnology.**

Thesis title: “**Defense Mechanisms against tobamoviruses infecting tomato and bell pepper**”.

Guide: **Prof. H.S. Prakash**

Department of Studies in Applied Botany and Biotechnology,  
University of Mysore, Mysore-570 006, India

Year of Award: 2010.

## 10. Work Experience:

SL No.	Institution Place	Position	From (Date)	To (date)
1	Central Sericultural Research and Training Institute, Mysore	Scientist-D	01.01.2020	Till date
2	Central Sericultural Research and Training Institute, Mysore	Scientist-C	13.06.2016	31.12.2019
3	Central Tasar Research and Training Institute, Ranchi	Scientist-C	28.02.2014	12.06.2016
4	Central Tasar Research and Training Institute, Ranchi	Scientist-B	07.05.2010	27.02.2014
5	Indo American hybrid seeds, Bengaluru	Virologist	01.08.2009	06.05.2010
6	Vibha Agrotech Ltd., Hyderabad	Agriculture Production officer	01.08.2008	31.07.2009

### Research Project(s)

#### Ongoing projects

- Principal investigator in CSB funded project on **“Isolation and characterization of chitosan from silkworm pupal shell and its commercial application” (PIC 01008 SI).**
- Co-Investigator in CSB funded project on **“Evaluation of new bivoltine silkworm double hybrid TT21 X TT56 at farmers level for authorization and commercial exploitation” (AIB 01009 MI)**
- Co-Investigator in CSB funded project on **“Screening of drugs/Inhibitors to inhibit the PI3K-Akt pathway in Bombyx mori for controlling Nuclear Polyhedrosis Virus infection” (AIT 01019 SI)**
- Co-Investigator in CSB funded project on **“Development of artificial intelligence empowered multisensory approach for gender classification and separation of silkworm cocoons” (MFM 01020 CN)**

#### Completed projects

- Worked as principal investigator in Pilot project on **“Development of hygrotolerant bivoltine breed/hybrids through molecular marker assisted selection” (2017-18) (CSB funded project) (August 2017-July 2018)**
- Worked as co-ordinator in Ministry of textiles funded project on **“Skill seeding and upgradation of skills in sericulture sector” (2014-15)**
- Worked as co-investigator in CSB funded project on **“Studies on tolerance of AmCPV in commercially exploited tasar ecoraces of Daba BV and TV under induced condition” (2012-upto June 2014)**
- Worked as co-investigator in CSB funded project on **“Identification of pebrinised& cytoplasmic polyhedrosis virus-infected stock through enzyme marker system in *Antheraea mylitta* Drury” (December 2011-November, 2013).**

## 11. Professional Career/Training

Course Name / Subject	Address of Institute	Duration (Year)	Sponsoring agency
Bioinformatics	S.K. University, Ananthpur, Andhra Pradesh.	2007	University Grant Commission(UG C)
Brainstorming session on Seri-biotechnology	APSSRDI, Hindupur, Andhra Pradesh.	2012	Department of Biotechnology (DBT)

2- D Electrophoresis and RT-PCR	JSS College, Mysore, Karnataka	2014	Department of Science and Technology (DST)
Program on Emotional Intelligence at Workplace for Scientists/Technologists	Centre for Organization Development, Madhapur, Hyderabad.	February 17 - 21, 2020	Department of Science and Technology (DST)

## 12. Important publications.

- **Madhusudhan, K.N.,**Prakash, H.S. and Shetty, H.S. 2009. Changes in antioxidant enzymes, endogenous hydrogen peroxide, endogenous salicylic acid concentration and oxidative stress in compatible and incompatible host-tobamovirus interaction. *Journal of plant interactions.* 4(3):157–166.
- **Madhusudhan, K.N.,** Deepak, S.A., Prakash, H.S., Ganesh, K.A., Jwa, N.S., Randeep, R. 2008. Acibenzolar-S-Methyl (ASM) induced resistance against tobamoviruses involves induction of RNA dependent RNA polymerase (RdRp) and Alternative Oxidase (AOX) genes. *Journal of Crop Science and Biotechnology.* 11 (2): 127-134.
- **Madhusudhan, K.N.,**Sivakumar, D. and Prakash, H.S. 2010. Pectin methylesterase estimation in plant-tobamovirus interaction and comparative modelling, active site prediction and Docking between the proteins involved in the movement of tobamoviruses. *Journal of Computational Intelligence in Bioinformatics.* 3(2): 163-174.
- **Madhusudhan, K.N.,**Nalini, M.S., Prakash, H.S. and Shetty, H.S. 2005. Effect of inducers against Tobamovirus infection in tomato and bell pepper. *International Journal of Botany.* 1(1): 59-61.
- **Madhusudhan, K.N.,** Siva Kumar, D., Mohitkumar, Sinha, A.K., Kirankumar, K.P. Reddy, P.M.M., Sinha, M.K.andJaishankar, C. 2014. Homology modeling and Active site prediction of RNA binding protein of *Anthereamylytta* Cytoplasmic polyhedrosis (AmCPV) infecting tropical tasar silkworm. *Indian Journal of Biotechnology and Biochemistry.*1(2): 91-96.
- **Madhusudhan, K.N.,** Aakash, K., Gupta,V.P., Naqvi, A.H., Singh, G.P. and Sinha, A.K.. 2016. Development of Slide agglutination method for detection of *Nosemamylytta* in tasar silkworm using polyclonal antibody produced against proteins of pebrine spores. *International Journal of Phamaceutics and Drug Analysis.* 4(5): 212- 216.
- **Madhusudhan, K.N.,** Vinayarani, G., Moorthy, S.M., Satish, L., Thirupathaiah, Y., Maheshwari, C., Prakash, H.S., Teotia, R.S. and Sivaprasad, V. 2019. Isolation, purification and characterization of antibacterial bioactive compounds from *Bougainvillea spectabilis* Leaf. *Journal of Pharmacognosy and Phytochemistry* 8(3): 2668-2673.
- **Madhusudhan, K.N.,** Meghana, P.B., Vinaya Rani G., Moorthy, S.M., Mary-Josepha, A.V., Kishorekumar, C.M., Prakash, H.S. and Sivaprasad, V. 2017. Extraction and Characterization of Chitin and Chitosan from *Aspergillus Niger*, Synthesis of Silver- Chitosan Nanocomposites and Evaluation of Their Antimicrobial Potential. *Journal of advances in Biotechnology.* 6(3): 939-945.
- Madhusudhan. K. N.\*, Ranjini. M. S., Manthira Moorthy, S., Teotia, R.S. and Sivaprasad, V. 2020. Identification of hygrotolerant genes in mulberry silkworm (*Bombyx mori* L.). *Bioscience Biotechnology Research Communication (Manuscript*

accepted).

- Vinayarani, G., **Madhusudhan, K.N.**, Deepak, S.A., Niranjana, S.R. and Prakash, H.S. 2011. Detection of mixed infection of tobamoviruses in tomato and bell pepper by using RT-PCR and Duplex RT-PCR. *International journal of Plant Pathology*. 2(2): 89-95.
- Pandey, J.P., Jena, K.B., Sinha, A.K., Smitha, Kumar, K.P.K., **Madhusudhan, K.N.** and Sahay, A.K. 2015. Intonation of biomolecular indices in tasar silkworm challenged with *Nosema* spores. *Sericologia*. 55(1): 55-60.
- Singh, G.P., Kiran Kumar, K.P., **Madhusudhan, K.N.** and Alok Sahay. 2015. Impact of botanical formulation on containment of virosis disease and cellular and humoral response in tasar silkworm *Antheraea mylitta* D. *International Journal of Research in Zoology*. 5(1): 13-20.
- Singh, G.P., A.K. Sinha, D.K. Roy, A. Sahay, **K.N. Madhusudhan**, P.K. Kumar and B.C. Prasad, 2011. Cellular and biochemical changes of *Antheraea mylitta* D. on Immunization with attenuated *Antheraea mylitta* cytoplasmic polyhedrosis virus. *International Journal of Zoological Research*. 7(3): 263-271.
- Singh, G.P., A.K. Sinha, **K.N. Madhusudhan**, P.K. Kumar, B.C. Prasad, D.K. Roy and Sahay, 2011. Attenuation of *Antheraea mylitta* Cytoplasmic Polyhedrosis Virus (AmCPV) and its potential as an oral vaccine against virus diseases in tasar silkworm, *Antheraea mylitta* D. *International Journal of Virology*. 7: 33-38.
- Lokesh. G., Putkho Paul Pao, **K.N. Madhusudhan**, P.K. Kar, A.K. Srivastava, M.K. Sinha, R. Manohar Reddy, P.M. Muniswamy Reddy and B.C. Prasad (2012). Study of Phenotypic Variability in Silk Gland Characters in Three Ecotypes of Tropical Silkworm *Antheraea mylitta* Drury. *Asian Journal of Animal and Veterinary Advances*. 7(1); 80-84.

#### **Book chapter:**

Vinayarani, G., **Madhusudhan, K. N.** and Prakash, H.S. 2019. Diseases of turmeric and their management Book: Diseases of Medicinal and Aromatic Plants and Their Management Editors Rakesh Pandey, A.K. Misra, H.B. Singh, Alok Kalra and Dinesh Singh TTP Today & Tomorrow's Printers and Publishers 4436/7, Ansari Road, Daryaganj, New Delhi - 110 002 pp: 29-46.

#### **International conference attended:**

Madhusudhan, K.N.\*, Moorthy, S.M., Hukkeri, S.M., Teotia, R.S., and Tiwary, P. presented research paper on "Synthesis and characterization of antimicrobial chitosan and silk fibroin nanofibers (CS-SF Nanofibers)" (Oral Presentation) in 25<sup>th</sup> International Sericultural congress (ISC) held on November 19-22, 2019 at Tsukuba, Japan.

#### **NCBI Gene deposits**

MN892552 KU247947 JX006081 GU213293 GU213294 EU408340 EU408341 EU408342 MH488808 KY971454 KY971448 MG488274 KY971444 MG488273 MG456576 MG456575 MG456574 MG456573 MG456572 MG456571 MF040157 MF040156 KY996477 KU247947 KU247946 MH229468 MH179338 MH179073 MH173842 MH173841 MH173838 MH173837 MH173835 MH173832 MH173833 MH173829 MH173820 MH173819 MH173818 MH173817 MH173810 MH173809 MH169594 MH169582 MH169581 MH169559 MH169352 MH169351 MH169343 MH169339 MH169239 MH169230 MH158544 MH014986 MH005100 MH005099 MH005070 MH001479 MH001475 MH001398 MG971220 MG966453 MG966452

#### **PDB structure deposits**

Homology modeled structures of movement proteins of Tobacco Mosaic Virus (TMV) and Tomato Mosaic Virus (ToMV) were deposited in Protein Data Bank (PDB) with ids **2IP5** ([www.ebi.ac.uk/2ip5](http://www.ebi.ac.uk/2ip5)) and **2IP8** ([www.ebi.ac.uk/2ip8](http://www.ebi.ac.uk/2ip8)) ([www.rcsb.org](http://www.rcsb.org))