

Release of an Exotic Parasitoid Wasp to Tackle Invasive Cassava Mealybug Menace in India

During April 2020, an alien invasive pest, cassava mealybug with extreme potential to cause huge crop damage and losses was noticed in Kerala. It was identified, reported and pest alerted by ICAR-NBAIR, Bengaluru during May 2020. Thereafter its spread and infestation on tapioca was noticed in entire Tamil Nadu and Kerala with severe tuber yield reduction.

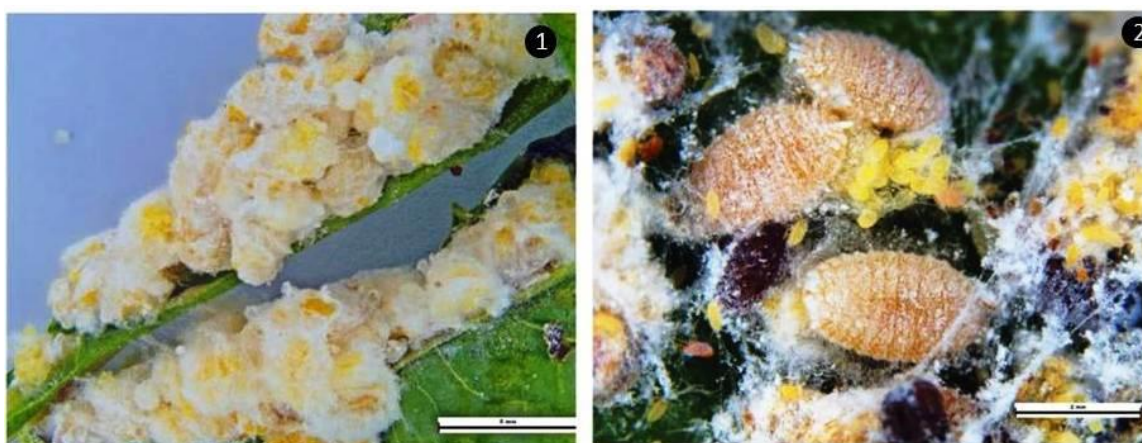


Fig: Cassava mealybug, *Phenacoccus manihoti*. 1. Ovisacs, 2. Reproductive adults

Cassava mealybug is one of the most destructive pests of tapioca in the world and native to South America. In the absence of any effective native natural enemies and other suitable methods of control, the cassava mealybug has successfully been suppressed through classical biological control program in many African and south east Asian countries. To tackle the current situation, the scientists from ICAR-National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru have imported the beneficial parasitoid, *Anagyrus lopezi* (Encyrtidae: Hymenoptera) from International Institute of Tropical Agriculture (IITA) with its sub center at Republic of Benin through International cooperation ably facilitated by Dr. T. Trilochan Mohapatra, Secretary, DARE & Director General, ICAR; Dr. Ravi Prakash, Plant Protection Adviser, DPPQ&S; Dr. T.R. Sharma, DDG (Crop Science) and Dr. S.C. Dubey, ADG (PP&B), ICAR.



Fig: 1. *Anagyrus lopezi* parasitoid, 2. Parasitisation by *A. lopezi*, 3. Parasitised (mummified) mealybug

The country representative Dr. Manuele Tamo, and Dr Georg Goergen, Entomologist from IITA, Benin supplied this parasitoid (Govt. of India import permit No. 17/2020-21 dated 29.10.2020) which was received at Bengaluru on 13 August 2021. The team of scientists comprising of Drs. M. Sampath Kumar, M. Mohan, A.N. Shylesha, Sunil Joshi and Ankita Gupta carried out the mandatory quarantine studies on biology, safety and host specificity of the *A. lopezi* at NBAIR QC-2 quarantine facility to ensure its non-target impacts. ICAR-NBAIR has optimized the mass production and field release protocol of this parasitoid wasp in small as well as large scale setup on cassava mealybug colonies. Further, ICAR-NBAIR has conducted the trainer's training programmes in four batches and trained the staffs of State Agricultural Universities, State Horticulture Departments and Krishi Vigyan Kendras on mass production and field release techniques of *A. lopezi*.

The first field release program of the parasitoids and its distribution to the cassava farmers have been organized by ICAR-NBAIR in collaboration with Tapioca and Castor Research Station (TNAU), Yethapur, Salem district of Tamil Nadu on 7 March 2022. About 300 tapioca farmers from six districts of Tamil Nadu attended the event. Sh. A.K.P. Chinraj, Member of Parliament, Namakkal constituency; Dr. J.P Singh, Additional Plant Protection Adviser, GOI; Dr S.C. Dubey, ADG (PP&B), ICAR; Dr. M.N. Sheela, Director, ICAR-CTCRI, Thiruvananthapuram; Dr M. Nagesh, Director, ICAR-NBAIR, Bengaluru; Dr. Subash Chander, Director, ICAR-NCIPM, New Delhi; Dr. Harsh Vardhan Singh, Director, ICAR-NBAIM, Mau (UP); Dr. A.S. Krishnamoorthy, VC, TNAU, Coimbatore, Mr. C. Kathiravan, Managing Director, Sago Serve, Salem graced the occasion.



Fig: Inaugural programme attended by dignitaries from various organizations



Fig: Gathering of farmers in the meeting



Fig: Distribution of *A. lopezi* parasitoids to the farmers



Fig: Field release of *A. lopezi* parasitoid by the dignitaries



Fig: Inauguration of *A. lopezi* parasitoid mass production unit at TCRS, Yethapur with the support and guidance from NBAIR



Fig: Batches of parasitoids supplied to the farmers after formal field release



Fig: ICAR-NBAIR stall in the exhibition