

Biocontrol News and Information



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early surveys, *P. aculeata* was not the main target species and collection of potential agents was done opportunistically. The early surveys were, however, successful in sourcing the first biocontrol agent for *P. aculeata*: the flea-beetle, *Phenrica guerini* (Chrysomelidae). This beetle feeds externally on the leaves of *Pereskia aculeata* as a larva and an adult. It was first released in 1991 and, although establishment success rates have been relatively low, it is damaging at a minimum of five sites in the country where it reduces the number of leaves of *P. aculeata* by over 150 leaves per metre squared. Despite the success of *Phenrica guerini* at a few sites in South Africa it was clear that more agents were required to reduce the negative impacts of *Pereskia aculeata* to acceptable levels.

In 2012, a survey for new agents was conducted, resulting in the importation of the pereskia stem-wilter, *Catorhintha schaffneri* (Coreidae). Host-specificity testing studies indicated that the species was monophagous, feeding only on *P. aculeata*, and that the agent was safe for release in South Africa. Permission for release was granted in 2014 and the first release was made in October 2014. *Catorhintha schaffneri* feeds on the shoot tips of *P. aculeata* and causes the shoots to split and rot. It is now the second summer season after it was first released and the initial levels of damage that have been recorded are very promising. Biological control is a long-term solution, and not a quick fix, so it will take many years before we know exactly how effective *C. schaffneri* is, but at one site where the agent was released, 95% of the shoot tips of *P. aculeata* were damaged and a 10% reduction in cover of *P. aculeata* was recorded during a single summer.

The pereskia stem-wilter was released at Sibudu in April this year. It was released within a few metres of the main dig, an area where physical and chemical control may cause damage to ancient artefacts. Hopefully the agent will thrive at Sibudu and protect the natural and cultural heritage at this recently proposed UNESCO World Heritage Site.

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India's National Bureau of Agricultural Insect Resources Bags Two National Awards

Bengaluru-based National Bureau of Agricultural Insect Resources (NBAIR) has been awarded the prestigious Sardar Patel Outstanding ICAR Institution Award (Small Institutes) for 2015 having been adjudged the best from among 34 institutes spread across India. It is pertinent to note here that NBAIR, in its earlier version as the Project Directorate of Biological Control, had won the same award in 1998. This Bureau, the youngest of the six bureaus under the Indian Council of Agricultural Research (ICAR), is undertaking the onerous task of documenting *in toto* the entire agricultural insect and related arthropod diversity of the country, including the associated organisms such as pathogens and other microbes. More importantly, research and development of biological control has been its mainstay. It caters to the needs of students, researchers, biocon-

trol entrepreneurs and the farming community of the country.

The accomplishments of the Bureau, operating out of the erstwhile Commonwealth Institute of Biological Control (Indian Station) at Hebbal, are many. Over a 100 new species of insects, many of them natural enemies of pests of agricultural and horticultural crops, have been discovered by its scientists. Web-based guides with high-resolution photographs to aid all those engaged in the identification of insects of agricultural importance have been developed and hosted on the NBAIR website (www.nbair.res.in). With the generation of DNA barcodes for well over 700 insects, the Bureau leads the country in this much-needed activity. As a national repository for agricultural insects, it houses over 100 live insect cultures (of a few pests and a number of parasitoids and predators) to support entomological research and to enable the management of insect pests of crops through biological means. It is the sole institution in the country to combine an array of entomological capabilities from the identification of pests to the development and formulation of strategies for the management of crop pests utilizing non-pesticide methods. The research excellence on the entomological front, and the service it renders to the farming community by providing bioagents for sustainable pest management, has paved way for its selection as the outstanding institution by ICAR.

Another feather in its cap is the Panjabrao Deshmukh Outstanding Woman Agricultural Scientist Award for 2015 going to Dr Chandish R. Ballal, who took charge as Director of NBAIR on 18 July 2016. Dr Ballal's research has focused on standardizing effective production technologies for host insects and for some of the most promising parasitoids and predators. She has formulated economically viable, simple and efficient mass-production protocols for a number of insects of agricultural importance. Her laboratory is the only source in the country for prompt and regular supply of authentic cultures of a wide range of natural enemies and other insects which form the cornerstone for research by students and biocontrol scientists. It also backs up the constant needs of commercial insectaries. With the year-round maintenance of 117 different insect cultures she controls one of the largest live insect repositories in the world. She has identified native bioagents for the management of important crop pests and formulated their modes of production and utilization. The mass-production protocols developed by her for several host insects, ichneumonids, anthocorids and predatory mites need special mention as they are first of their kind in the country. By interacting with farmers and conducting demonstration trials in farmers' fields she has substantially contributed to building confidence in farmers on the efficacy of this non-chemical mode of pest management. Through her publications, training programmes, farmer interactions and supply of quality natural enemies, she has made sustained efforts to popularize biological control as an essential component of integrated pest management in the country.

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