

Area-wide Integrated Pest Management

THE SOUTH AFRICAN SUGARCANE RESEARCH INSTITUTE (SASRI) HAS ADOPTED A HOLISTIC AREA-WIDE INTEGRATED PEST MANAGEMENT (AW IPM) APPROACH TO ITS ARTHROPOD AND PLANT PEST CONTROL IN THE SUGARCANE AGROECOSYSTEM.

Sugarcane is an exotic grass planted in a diverse subtropical environment, and as such sets itself up to indigenous arthropod and plant invasions. The current large monoculture stands of sugarcane also lends itself to invasion by exotic pests. Sustainable control of these “pests” can only be attained in a knowledge-based environment. This environment includes good soil health and nutrition, wetland and riverine health, plant and animal ecological conservation principles, knowledge of the behaviours of the potential pests and their natural controlling factors, all combined with state of the art modern plant breeding and agronomic agriculture. This leads to the establishment of a resilient agro-ecosystem, which can far better contain pest incursions. Aspects of this knowledge-based system, especially in terms of AW IPM are highlighted.

Eldana saccharina or eldana as most know it, has been the “mentor” in this regard, and has been the



Eldana saccharina has been the major player in SASRI's focus on area-wide integrated pest management.

major player in SASRI's focus on area-wide integrated pest management. This approach developed in the early 1990s since it was recognised that this could be a weapon in the fight against eldana. Eldana is an indigenous moth that lived in wetland sedges prior to the introduction of sugarcane into South Africa. These sedges have been shown to have a complex of natural enemies that controlled the moth in text book fashion when these wetlands were not disturbed – a situation not currently found in sugarcane. Unfortunately, the wetland habitats have been encroached by sugarcane fields, and more recently alien invader plants, which have reduced the density of eldana's host plants, and thus natural enemies drastically. The re-establishment of eldana's indigenous host plants and habitat (by biologically controlling the alien plants encroaching it) and re-establishing its indigenous hosts, will help considerably by attracting this insect back into the habitat, which it prefers to sugarcane anyway, to utilise its effective natural enemies in SASRI's AW-IPM approach.

The benefits of biocontrol and habitat management reaches beyond pest control, and into environmental stewardship, which in modern agriculture should receive increased attention by all land-owners and custodians. Its incorporation into an effective knowledge based AW IPM programme will become the most effective way of managing invasives from any source in the future. ♻️

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