POSTER SUMMARY

ELDANA INTEGRATED PEST MANAGEMENT: THE SASRI INTEGRATED RESEARCH, DEVELOPMENT AND INNOVATION PORTFOLIO

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Abstract

Research outcomes accumulated over three decades and the experiences of growers, extension and biosecurity specialists and researchers alike indicate that effective and sustainable *Eldana saccharina* Walker (Lepidoptera: Pyralidae) (eldana) management is contingent on the implementation of an integrated pest management (IPM) approach on an area-wide basis. To develop the tools necessary for eldana integrated pest management (IPM), the South African Sugarcane Research Institute (SASRI) conducts multi-disciplinary research, development and innovation (RDI) that aims to meet and integrate six specific eldana IPM strategic objectives: (a) to develop technologies that enable the reduction or avoidance of plant stress and the priming of plant stress resistance such that plant innate resistance to eldana is potentially enhanced; (b) to harness native and foreign genetic sources of resistance to eldana and implement technologies to increase the efficiency of eldana resistance breeding; (c) to develop cost-effective technologies that permit the establishment of agro-ecological environments in which eldana populations are suppressed to low levels by benign biological means; (d) to develop a suite of effective insecticidal eldana control agents and responsible application tactics that are agriculturally, environmentally, ecologically and economically sustainable; (e) to implement digital spatial mapping that facilitates the collation and interpretation of environmental and biological data that are central to effective and proactive eldana management; and (f) to enhance adoption of eldana IPM through practical demonstration of efficacy and promote the approach as an integral component of sustainable sugarcane farming practice. The purpose of this poster paper is to outline the multi-disciplinary portfolio of projects currently addressing the objectives of the SASRI eldana IPM RDI programme and indicate future directions for the programme, including the placement of two specific technologies believed to hold considerable potential as components of the eldana IPM technology tool-kit, *viz*. genetically modified insect resistance and the sterile insect technique.

Keywords: crop stress management, eldana resistance, habitat management, chemical control, sterile insect technique, genetic modification