



**ABOVE:** Green manures such as Sunnhemp break the monoculture cycle and introduce greater biodiversity, resulting in improved crop protection

# Crop Protection

*The South African Sugarcane Research Institute (SASRI) is responsible for the provision of agricultural research, development and specialist services for the sugar industry in South Africa to enhance and sustain the growth and production of sugarcane.*

One of the key focus areas at SASRI is research and development into crop protection. The goal of the Crop Protection Research Programme is the development of integrated management strategies that minimise the effects of pests, diseases and weeds on crop production in a sustainable manner. One of the main objectives in the programme is to develop effective Integrated Management Strategies and models combining varieties, agrochemicals, biological control agents and nutrition with beneficial cultural and environmental management practices.

### INTEGRATED PEST MANAGEMENT

Overall reliance on any one strategy is not recommended by SASRI. Rather, an effective area-wide integrated pest management (IPM) approach is encouraged that builds on the fundamental role that varieties play in sugarcane farming. These varieties are bred and selected for their resistance to pests and diseases and form the pillar of the IPM programme that SASRI recommends together with habitat management,

biocontrol, nutritional management, agronomic management and agrochemicals. Agrochemicals are recommended only when varietal resistance has been inadequate or a when a new pest incursion occurs. From a disease point of view, fungicide application in the industry is limited.

### PESTS AND DISEASES

Amongst the pests and diseases that do impact on sugarcane agriculture, stalk borers, thrips, nematodes, white grubs, smut, rust, mosaic and certain weeds are notable. It is recommended that control is orchestrated through implementation of an IPM approach. This is embedded in a Sustainable Sugarcane Farm Management System, SUSFARMS® that has been adopted by the industry. Based on current legislation, SUSFARMS® is designed to enable production in an environmentally and socially sustainable manner.

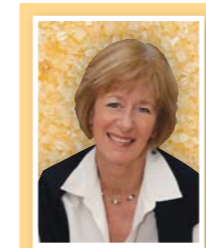
SASRI recommends the use of chemicals within the context of IPM. Consequently they are not recommended as a first line of defence. The range of chemicals that are registered for use in sugarcane are diverse.

Annually SASRI compiles and publishes a Herbicide Guide, with details of the various recommended practices for chemical weed control. SASRI provides recommendations arising from sound scientific

evidence and regularly publishes its recommendations on sound stewardship practices and adherence to health and safety legislation. The safe use of chemicals is promoted and implemented through SUSFARMS® in which growers are encouraged to self-regulate and monitor chemical use, according to government legislation.

### BIOCONTROL

SASRI actively promotes biocontrol within the context of SUSFARMS® and IPM. Biocontrol efforts in the industry extends from the control of insect pests to invader species such as alien invasive plants and water weeds using biological control agents, many of which are reared at SASRI and released into the regions. The benefits of biocontrol and habitat management reach beyond pest control, and into environmental stewardship.



**Dr Carolyn Baker**  
Director  
South African Sugar Research Institute  
South African Sugar Association

**Mather+Platt**

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26 Nagington Road, Wadeville, Germiston, 1400. P.O. Box 14733, Wadeville 1422, South Africa  
Tel: +27 11 824 4810, Fax: +27 11 824 2770, e-mail: dave@matherandplatt.com www.matherandplatt.com

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