SUGAR INDUSTRY'S BIOSECURITY SERVICE

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The detection of the latest pest incursion impacting our industry, the longhorn beetle, reminds us once again of the significant benefits of having a structured extension and biosecurity service in our industry. The sugar industry is unique in South Africa in having its research, extension and biosecurity endeavours all clustered under the same umbrella and delivered in a coordinated and comprehensive manner. This close articulation of functions enables early detection, understanding and swift response to any incursions that threaten our industry.

The term 'biosecurity' refers to practices, policies and procedures that protect the health of a living organism against any biological harm. In the context of the sugar industry, biosecurity involves preventing pests and diseases from being introduced into a region, or developing appropriate control measures if these pests or diseases already exist in a region.

Centralisation of industry Biosecurity

Since April 2015, the biosecurity function of the SA sugar industry has been under the management of the South African Sugarcane Research Institute (SASRI). Previously this function (commonly referred to as local pest, disease and variety control – LPD & VCC) was managed and funded regionally by growers. This is now funded by both growers and millers, with the staff and operations being managed at SASRI.

Together with this change came the amalgamation of the Extension Service and Biosecurity Inspectorate at SASRI. This enabled the delivery of an even more effective and co-ordinated service to the industry.

There is now a generic set of LPD&VCC Rules applicable to all areas as well as significant amendments to the Sugar Act. The important changes include the following:

- There are now minimum areas required to be surveyed for each important biosecurity threat. This ensures that the industry as a whole is adequately protected
- A time period has been stipulated by which each committee area must comply with the industry rules, including the requirements for seed-cane, for which there are also uniform standards
- An amendment to the Sugar Act to include insecticide spraying as a remedial measure for the control of eldana in addition to the harvesting and destruction of cane. This change has enabled LPD&VCCs to enforce spraying where deemed necessary. This was a momentous addition as new insecticides became available and with eldana a serious threat in many areas
- The inclusion of remedial measures for threats such as *Chilo sacchariphagus* and Orange rust (*Puccinia kuehnii*) (which are not yet present in the industry), should an incursion occur.

This centralised function has facilitated a more streamlined approach to the control of pests and diseases in each sugar-growing region. Milestones are now more easily implemented and monitored. It has also allowed for a more proactive approach to any new incursions and the easy inspection and distribution of clean seedcane.

Advantages of a central focus

The centralisation of the Biosecurity function has also provided several operational advantages to the industry. LPD&VC Committee meeting agendas are now largely free of operational and staff issues and the focus is more on biosecurity issues. With the drought during the last season, the industry was placed under severe threat due to dramatic increases in eldana levels in many areas, smut levels in the Irrigated North and widespread shortages of seedcane. These issues have placed a heavy demand on resources and LPD&VCCs were often called on to take strong measures to contain these threats.

Previously, there were not enough biosecurity inspection teams and technical support staff servicing the industry. There is now a full complement of 23 teams based at centres across the industry, who are charged with ensuring that the industry is adequately protected from various biosecurity threats.

A further advantage has been the opportunity to share resources across regions. For example, last season, the significant upsurge of eldana in the Zululand and North Coast regions called for intensive surveys of cane earmarked for carry-over. The local inspection teams would not have been able to cover enough area to obtain a representative sample. Two additional teams were brought in from other LPD&VCC areas to assist. This enabled approximately 10 000 hectares to be surveyed, providing valuable information on the status of the pest at the time.

Monitoring for potential threats

The centralised biosecurity inspectorate is also involved in monitoring for pests and diseases not yet present in our industry. This includes Orange Rust, a potential fungal pathogen of sugarcane, using SASRI-developed spore traps positioned along the borders of South Africa, and an even bigger threat to sugarcane, the spotted stem borer *Chilo sacchariphagus*. Chilo is a known pest of sugarcane and, just like the already damaging *Eldana saccharina*, bores into the stalks of cane plants. This damage leads to losses in both cane yields and cane quality. The pest is already known to be present in neighbouring Mozambique and an incursion of this pest into our industry could possibly lead to billions of rands in losses.

In order to monitor a possible incursion in South Africa, SASRI Biosecurity has teamed up with an external service provider to continuously monitor for the presence of Chilo along the border of South Africa and Mozambique.

There are approximately 33 traps at sites determined by SASRI. The area monitored at this stage extends from Kaapmuiden in Mpumalanga to Kosi Bay in KwaZulu-Natal. SASRI may alter the positioning and numbers of traps in the grid, if necessary. Traps are also situated either near or at each of the border posts between South Africa, Swaziland and Mozambique. There are also traps at each mill in the Mpumalanga Lowveld and at Pongola. This allows Biosecurity teams to be sufficiently alerted and to implement incursion plans should Chilo be found in the country.

Keeping abreast of threats in other agricultural sectors

The external partner provides a service which allows for the monitoring and early detection of southern Africa's invasive pest species as per government regulations. This early warning system is used to detect pests in a variety of agricultural sectors including the tomato, olive, peach and tobacco industries, among several others. There are also international relationships with governments abroad to assist with information and research on potential pests. This is beneficial to SASRI as we are now able to interact with other countries to further our knowledge on several pests.

Monitoring insect incursions through early warning systems is an important part of the South African sugar industry's Biosecurity Strategy, and partnerships with companies and neighbouring countries go a long way in strengthening our position in fighting off incursions.

Recent concerns

More recently, SASRI's Biosecurity Inspectorate has been on the lookout for Fall Armyworm, a pest which has had a serious impact on the SA maize industry. The survey teams have also been briefed to scout for the Longhorn Beetle, a recent incursion in the Entumeni area. In response to this, various containment measures have been imposed. The beetle has been declared a hazardous pest in terms of industry legislation and a comprehensive research project has been approved. This will provide greater understanding of the biology of the pest and will determine appropriate control measures.

An active, motivated and well-trained biosecurity inspectorate, together with a robust regional biosecurity incursion plan, serves as an essential insurance policy for the long-term sustainability of our sugar industry.

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SASRI Biosecurity Team doing surveys.