

All About Agrochemicals



The Sugar Journal asked Graeme Leslie, Principal Entomologist at the South African Sugarcane Research Institute at SASA, for some general information on agrochemicals. Agrochemicals are expensive products and, because of their extensive use, they are particularly significant input costs for growers. However, the critical benefits derived from the effective use of agrochemicals compensate for these costs. While the use of agrochemicals is necessary for sugarcane production, the industry is committed to environmentally sustainable farming practices. SASRI therefore advocates an integrated approach to pest and disease management, with the use of agrochemicals representing just one component in a whole suite of control options.

WHAT ARE AGROCHEMICALS?

Agrochemicals are biologically active molecules that are used in commercial agriculture to reduce the impact of pests and diseases on crops and livestock as well as to improve crop performance.

They come in many forms including insecticides, herbicides, fungicides, nematicides and ripeners. Over the years, research has aimed to ensure that active molecules have become more and more selective, aiming to increase their efficacy while minimising any possible side effects as a consequence of their use.

For an agrochemical to be legally used in South Africa it has to be registered in terms of Act 36 of 1947. If registered, the label clearly states the conditions under which it can be used for optimal efficacy and minimal risk to users, the crop and the environment. It should also be noted that fertilisers are controlled by this Act and require registration as well.

WHAT ARE THE TYPES OF AGROCHEMICALS USED IN THE SUGAR INDUSTRY?

In the sugar industry a range of agrochemicals are actively used in sugarcane production. Most of these are herbicides (33) but include 5 fungicides, 4 insecticides, 4 nematicides as well as 4 ripeners. As new agrochemicals are developed they are assessed for efficacy against sugarcane problems and, if effective, eventually registered for commercial use. Although new molecules are being developed, improved formulation and synergistic combinations of existing ones are a developing area that offers exciting possibilities for reducing costs and risk while improving efficacy. In addition, novel application strategies can result in further improvements.

WHAT ARE THE MAIN BENEFITS OF AGROCHEMICAL USAGE?

The benefits of agrochemicals are many. For example, they can be a critical component of any effective Integrated Pest Management (IPM)



strategy. However, even on their own, they can offer a highly effective option for pest control particularly in the case of weeds. Often when pest populations expand beyond the ability of any natural control mechanisms to reduce them, it is only by the use of agrochemicals that pest pressure can be significantly reduced in commercial crops. As a standard component of sugarcane agriculture, agrochemicals play a fundamentally critical role in enabling effective crop establishment.

ANYTHING NEW IN THIS SECTOR WORTH NOTING?

There is evidence to support the view that climate in the sugarcane industry is changing. This presents challenges including the increased risk of new pests and diseases or currently benign ones that become serious. It is in this light that we can see agrochemicals being not only particularly useful components in sugarcane agriculture, but critical in suppressing initial outbreaks.

The development of GIS systems and precision mapping will allow the development of targeted application so placing agrochemicals where they are most needed. This, in combination with their improved formulation, offers greater cost effective use with no loss in efficacy.

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