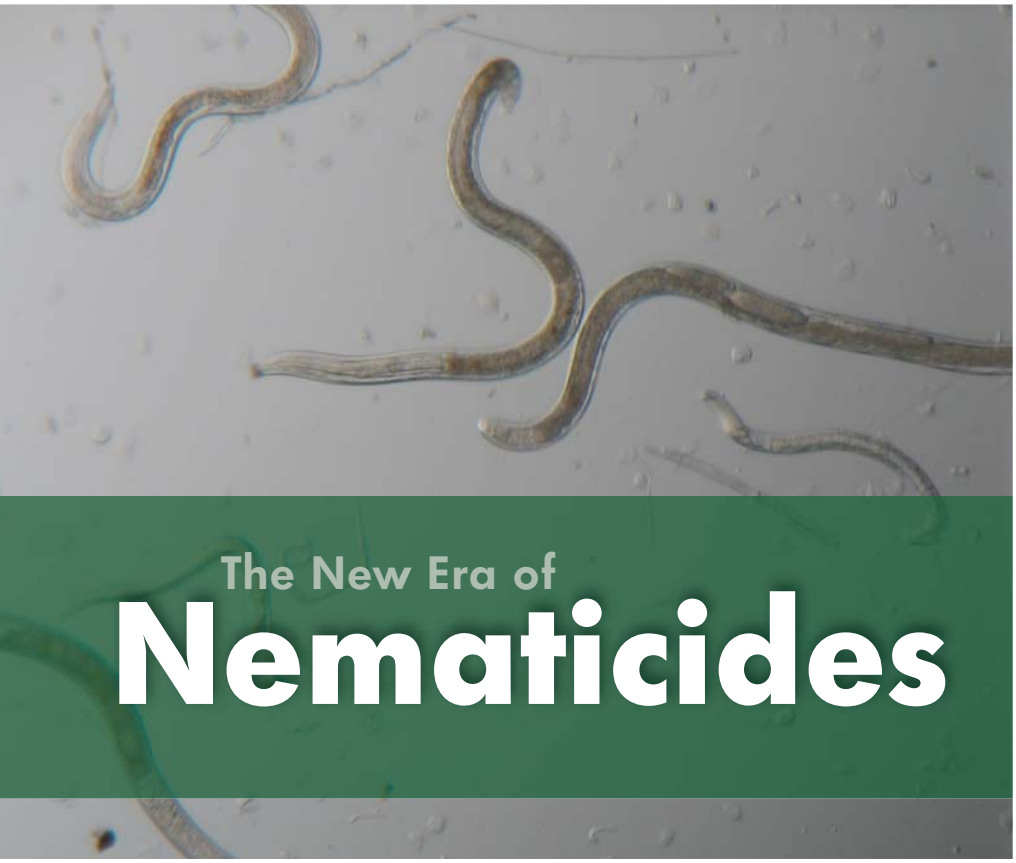

The New Era of Nematicides

ABOVE : SASRI Nematologist, Prabashnie Ramouthar, taking soil samples for nematode analysis.

Plant parasitic nematodes are a major constraint to sugarcane production in South Africa, costing the industry approximately R450 million at the last estimate. The most common method of control against plant parasitic nematodes is nematicides. Nematicides can be described as a group of chemical pesticides that kill plant parasitic nematodes.

The first record of a nematicide (chloropicrin) was in the early 1900s against ***Heterodera schachtii.*** This was followed by the fumigants such as methyl bromide which surfaced around the 1940s. The last wave of products was in the 1960s. These were part of the organophosphate and carbamate groups, with the most common product in South Africa being Temik®. Fumigants, organophosphates and carbamates are all highly effective chemicals but also highly toxic. Despite their efficacy and importance in agriculture, many of these highly toxic chemicals either have been or are on the list to be phased out around the world. In South Africa, Temik® has already been deregistered and many of the other red label products are due to follow suit.

Due to the efficacy of the old products, the relatively small nematicide market compared to other pesticides and the difficulty of developing effective nematicides, very few new products have been developed in the last 30 years. However, there has been a revival of the nematicide market with many new products currently being developed. The new nematicides are all based on novel active ingredients and, more importantly, are much less toxic. Most chemical companies are also starting to realise the value of biological control agents and are consequently investing in their development. They are also promoting the concept of integrated pest management. At the recent International Nematology Congress held in Cape Town, two new nematicides were launched and many more developmental products presented. Unfortunately these products are not yet registered in sugarcane, but efforts are being made by SASRI to pursue their registration.

The new wave of nematicides which have arrived are characterized as low toxicity, environmentally-friendly products that can be used as part of a sustainable farming operation.

Prabashnie Ramouthar
Nematologist
South African Sugarcane Research Institute