THE EFFICACY OF CROP GUARD® (FURFURAL a.i.) AS A NEMATICIDE ON *MELOIDOGYNE SP.*

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Professor Rodriguez Kabana from Auburn University, Alabama, discovered the nematicidal properties of furfural during the late 1980's where after international patents were obtained for the product during 1991. The development of furfural as a nematicide in South Africa started out in 1995 under leading of Dr. Greg Burger and his team from Illovo Sugar Ltd. Based in South Africa. Illovo Sugar Ltd. is a leading sugar producer and also a basic furfural producer.

While registrations in the USA are being handled by the EPA under a phased approach moving from non food greenhouse through to food applications, the registration process in South Africa differs substantially. The South African Department of Agriculture requires crop specific registration trial data and Crop Guard® is already registered on 13 crops and further development work is underway. An efficacy pot trial for the control of *Meloidogyne* sp. (Rootknot nematode) on tobacco was executed in the greenhouse during autumn 2006. Crop Guard® applications were applied at dosages of 25, 50, 100 and 400 l/ha as well as 25ppm, 50ppm, 100ppm and 400ppm. Soil samples were obtained before application and 24 hours after application. Results showed a definitive drop in nematode numbers during the 24 hour period of exposure to the Crop Guard® in the soil. The lower dosages (25 & 50 l/ha and 250ppm & 500ppm) showed a ± 60% reduction in nematode numbers while the higher Crop Guard® dosages (100 & 400 l/ha) and the standard nematicide, Cadusafos, showed a ± 80% reduction in nematode numbers.
Both *in vitro* and greenhouse pot trial studies on tomatoes and brinjals were conducted in South Africa to determine the effect of Crop Guard® on the outer protective protein-lipid layers of *Meloidogyne sp.* egg sacks. A dosage range of 12.5, 25, 50, 75, 100, 150, 200, 400 and 600l/ha was evaluated and various degrees of damaged egg sacks were found ranging from dissolved to cracked outer surfaces, total exposure of the eggs and even dehydration of underlying females in the plant tissue. A range of pictures were taken to illustrate the damage caused to the outer layers of the egg sacks by the different dosages of Crop Guard® (furfural a.i.).