

## An overview of the development of furfural (Crop Guard<sup>R</sup>) as a nematicide in South Africa

### The biological efficacy of furfural within the agricultural environment

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The nematicidal properties of furfural were discovered by Professor Rodriguez Kabana, Auburn University, Alabama in the late 1980's with international patents subsequently being lodged in 1991. Illovo Sugar Ltd, a South African sugar and basic producer of furfural started development work on the active ingredient in 1995.

The Department of Agriculture in South Africa requires crop specific registration trial data. The extensive data generated at low dosage rates (25L/ha to 50L/ha) at planting and during the growing season has proven good nematicidal control and season length protection against nematodes. Application during the growing season is possible as furfural has a low phytotoxic profile; this unique attribute supports season length nematode control for high value crops. Data that has been generated via the registration trials and commercial successes will be expanded upon.

Registration is currently obtained on 13 crops and Crop Guard (trademarked product) has been used commercially in South Africa for three agricultural seasons.

In the United States of America furfural is being developed as a preplant methyl bromide alternative where nematicidal, fungicidal and select herbicidal properties have been proven at the higher dosage rate of 400L/ha. The specific nematicidal and fungicidal properties at the 50L/ha dosage rate are also being developed for post plant protection on crops such as turf and ornamentals. Furfural has been tested extensively in strawberries and several mulched vegetables with good crop safety. Trials have been run in major strawberry and vegetable production areas in FL, CA, MI, AL and NC in direct comparison to a MeBr/Chloropicrin standard which provided statistically comparable results.

Regulatory review of furfural is underway at the Environmental Protection Agency with the first approval for non food greenhouse application expected in the near future