

THE BIOLOGICAL EFFICACY OF FURFURAL ON TURF IN THE SOUTH AFRICAN ENVIRONMENT

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Furfural has proven nematocidal properties which have been confirmed after more than a decade of research and extensive field trials. Illovo Sugar Ltd, a South African sugar and basic producer of furfural started development work on the active ingredient in 1995. They developed two emulsifiable concentrate (EC) formulations, Crop Guard[®] (for South Africa) and Multiguard[®] Protect (for the United States), that are soluble in water and move evenly throughout a soil profile under specific field conditions.

In order to have Crop Guard[®] registered as a nematocide on turf in South Africa specific crop data was required by the Department of Agriculture in South Africa. Extensive trial work was carried out to determine the efficacy of Crop Guard[®] for the control of a wide range of plant parasitic nematodes on turf under South African field conditions. Registration was granted in 2003 and the product is being currently used commercially within South Africa successfully for three consecutive seasons.

Phytotoxicity trials on turf in South Africa showed that Crop Guard[®] when applied as directed on the label will not cause phytotoxicity. Results from registration trials show that Crop Guard[®] kills nematodes and shows a similar efficacy profile to Nematicur, the registered product. Based on the trial data it is recommended that Crop Guard[®] is applied at an initial dosage rate of 75 l/ha, typically at the beginning of the season or at high nematode infestations. The initial application is to be followed with a four weekly application of 25 l/ha of Crop Guard[®] to result in long term benefits to turf. A single application of Crop Guard[®] will result in a reduction of nematodes but because of re-infestation and dormant nematode eggs multiple applications are required to provide season length protection.

Development is currently underway in the United States to optimize rates of Multiguard[®] Protect for the control of various nematodes. Initial screening has shown that there is good control of various nematodes including the sting nematode that is not currently found in South Africa.