TASK 5. Development of Chemical/Physical Profile: O,O-Dimethyl S-[(4-oxo-1,2,3-benzotriazin-3(4H)-yl)methyl]phosphorodithioate

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Final Report

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SUBMITTED TO:

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Arlington, Virginia 22202

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O,O-Dimethyl S-[(4-oxo-1,2,3-benzotriazin-3(4H)-yl)methyl]phosphorodithioate

1. Aqueous Degradation

No data are available on the aqueous degradation of Guthion.

2. Soil Degradation

Studies show Guthion to be persistent in soils. In clay and muck sand soils Guthion persists for at least a year. In silt loam, clay, sandy loam, and loamy sand soils more than 10% of applied Guthion remains after 200 days. Guthion persists for several years when applied at high concentrations to a sandy loam soil. Guthion has no effect on fungi, bacteria, or actinomycete populations when applied at 50 and 250 ppm in silt loam and clay loam soils.

3. Soil Mobility

Guthion shows strong soil adsorption, with adsorption coefficients (Kd, ml/gm) of 3.33, 11.04 and 28.5 on sandy loam, silt loam, and high organic silt loam soils, respectively (temperature unspecified). Radiolabeled Guthion leaches slightly in a silt loam soil, with only 4.4% of the applied radioactivity found in leachate after elution of a column with 0.5 inches of water daily for 45 days.

4. Accumulation

Guthion is rapidly taken up and rapidly excreted by channel catfish, resulting in low accumulation.

References:

1. EPA registration file nos. 3125-25, 193, 123, and 102.