

3.6 Cyantraniliprole: Low risk for bees resulting from seed treatment use in oilseed rape

Axel Dinter, Alan Samel

DuPont de Nemours (Deutschland) GmbH, Hugenottenallee 175, D-63263 Neu-Isenburg, Germany, axel.dinter@dupont.com

Abstract

Cyantraniliprole is the second active ingredient in the anthranilic diamide insecticide class (IRAC Group 28; next to chlorantraniliprole) and the first to control a cross-spectrum of chewing and sucking pests. Cyantraniliprole is a systemic insecticide and mobile via xylem. Oilseed rape seed treatment with cyantraniliprole 625 g/L FS (Lumiposa) at 50 µg a.s./seed provides excellent control of against pests like flea beetles in young emerging rape. The Lumiposa seed treatment product is registered for use in rape in USA and Canada.

Cyantraniliprole is characterized by low water solubility (about 0.01 g/L). No increased honeybee mortality was determined in the oral acute toxicity test at maximum water solubility level of cyantraniliprole indicating a low risk potential for bees via systemic plant exposure routes. Also, cyantraniliprole shows rapid decline in soil with DT50 soil values ranging between 13-87 days with no potential for accumulation in soil from repeated uses according to cyantraniliprole labels.

Cyantraniliprole residue can be found in guttation droplets of young emerging rape plants, but the cyantraniliprole concentrations in guttation droplets show a rapid decline. No residues of cyantraniliprole metabolites were detected in any rape guttation liquid samples. Worst-case oral risk assessments indicate low risk for bees resulting from the potential cyantraniliprole uptake via guttation liquid.

Cyantraniliprole residues or residues of plant metabolites were not detected in pollen or nectar of flowering summer or winter rape or in bee matrices like honey or wax.

Honeybee colonies exposed next to flowering winter oilseed rape seed-treated with Lumiposa and honeybee colonies exposed to control field in Germany and France confirmed the safe use of Lumiposa and lack of any effects on honeybee colonies.

Based on the available data for cyantraniliprole and its metabolites it is unlikely that the intended use of Lumiposa as oilseed rape seed treatment will have any unacceptable in- and off-crop effects on bees resulting from systemic exposure (guttation droplets, nectar or pollen) or from dust drift during drilling.