

Environmental toxicity

Fluroxypyr ester is highly toxic to fish and other aquatic organisms but quickly breaks down to fluroxypyr acid which is only slightly toxic.

Fluroxypyr acid has a very low order of toxicity to wildlife such as birds and animals, and is not toxic to honey bees. If using an adjuvant and treating plants in flower, check the adjuvant label or SDS for bee toxicity advice.

Fluroxypyr does not accumulate in aquatic or terrestrial food-chains.

Poisonous plants

Starane Advanced is not toxic to grazing livestock, however poisonous plants may become more palatable after spraying with herbicides and stock should be kept away from these plants until they have died down.

Burning treated vegetation

Fluroxypyr in plant tissue is destroyed when treated vegetation is cleared by burning.

Human health and safety

Starane Advanced has low toxicity if swallowed, and small amounts swallowed incidentally as a result of normal handling are not likely to cause injury. The product may cause eye and skin irritation and allergic skin reactions in some individuals. When the correct personal protection equipment is worn (see Safety Directions on the product label), accidental exposure to Starane should not result in any harm to the user.

Fluroxypyr is not carcinogenic (does not increase tumors), is not mutagenic (does not damage genetic material) and is not teratogenic (does not harm the unborn).

Conclusion

The behaviour of Starane Advanced in the environment and the low toxicity to mammals and other wildlife indicates no undue hazards when applied for the control of weeds.

However, like all agricultural chemicals, it should be applied in a responsible manner to minimise off-target spray and contamination of waterways.

Throughout Australia there are great variations in climate, soil type, vegetation, topography and land use. All of these have an effect on the behaviour of chemicals in the environment.

Any persons having questions on the possible effects of any Corteva Agriscience product should contact our customer service team, toll free on 1800 899 147.



Starane[®] Advanced Herbicide

Health and safety profile



Starane[®]
Advanced
HERBICIDE



Starane® Advanced is used in Australia to control weeds in winter cereals, sorghum, sugarcane, sweetcorn and pastures, as well as various woody weeds in pastures, rights of way and forests. Starane Advanced is most commonly applied by boom sprayer or aircraft although treatments by high volume handgun, knapsack, gas gun and basal bark equipment is also recommended.

This brochure is a general guide on the toxicology and behaviour of Starane Advanced in the environment when used for weed control. Detailed information on rates of application and directions for use are set out on the product label.

Chemical characteristics

Starane Advanced contains 333 g/litre of the herbicide fluroxypyr in the form of an oil soluble, water emulsifiable methyl heptyl ester formulation. The ester form converts rapidly to the parent fluroxypyr acid once in soil, water, plants and animals so it is the properties of this chemical which are important in assessing health and environmental behavior.

Fluroxypyr is a member of the pyridine carboxylic acid family of chemistry. This class of chemistry is known to possess auxin-like properties, where the herbicide binds to protein receptor sites that normally regulate plant processes. Fluroxypyr is rapidly absorbed by the leaves and roots, moves systemically throughout the target plant in the xylem and phloem and accumulates in the meristematic tissue, where it deregulates growth metabolic pathways. The disruption of these pathways causes deregulated plant growth and symptoms in susceptible plants such as thickened, curved and twisted shoots, stems and leaves, and cupping and crinkling of leaves.

Starane Advanced at low rates will damage nearby sensitive plants and must be used responsibly to minimise off-target drift. No volatilisation during or after application is expected.

Fluroxypyr has low solubility in water.

Environmental fate characteristics

Behaviour in soil

Fluroxypyr degrades fairly rapidly once applied to plants. Residues in soil generally remain in the top 30 cm layer of soil. Fluroxypyr is readily broken down by soil organisms. The rate of breakdown in the soil varies according to the degree of microbial activity.

A moist, warm, aerated soil with high organic matter produces the most rapid rate of breakdown.

The breakdown of fluroxypyr ester to the acid form is usually completed within one week in soil. Fluroxypyr acid degrades (ultimately to carbon dioxide) fairly rapidly (half-life of 1–4 weeks) by microbial activity and the resultant chemicals are harmless to living organisms and the environment. Fluroxypyr has low soil mobility and leaching has been shown to be negligible.

Behaviour in natural surface water

In water, fluroxypyr ester is rapidly broken down to the parent acid by the process of hydrolysis. Fluroxypyr acid is relatively stable in sterile water. No breakdown chemically or by sunlight occurs. In natural water systems which usually contains particles of soil, humus, micro-organisms and various dissolved ions, degradation is moderately quick (half-life 4–14 days) in anaerobic conditions.



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