This is a provisional English translation of an excerpt from the original full report.

Risk Assessment Report

Pyroxasulfone

(Pesticides)

Food Safety Commission of Japan (FSCJ)
August 2019

ABSTRACT

FSCJ established health based guidance values of pyroxasulfone (CAS No.447399-55-5), a isoxazoline herbicide, based on results from various studies in the risk assessment.

The data used in the assessment include fate in animals (rats, goats and others), fate in plants (corns, soybeans and others), residue in crops, subacute toxicity (rats, mice and dogs), subacute neurotoxicity (rats), chronic toxicity (rats and dogs), carcinogenicity (rats and mice), two-generation reproductive toxicity (rats), developmental neurotoxicity (rats), genotoxcity, immunotoxicity (rats and mice), and

Major adverse effects of pyroxasulfone were neurotoxicities in central and peripheral nervous system such as axonal/myelin degeneration, myocardial degeneration/necrosis in rats and mice, inflammation, degeneration or necrosis of the skeletal muscle in rats and dogs, decreased kidney weight, retrograde (ascending) nephropathy in mice and urinary bladder mucosal hyperplasia in rats.

No reproductive toxicity, teratogenicity, developmental neurotoxicity, genotoxicity relevant to human health or immunotoxicity was observed.

Increased incidences of transitional cell papillomas in the urinary bladder in males and adrenal pheochromocytomas in females were observed in a two-year carcinogenicity study in rats, however, a genotoxic mechanism was unlikely to be involved in the tumor induction and it was considered possible to establish a threshold dose in the assessment.

Based on various studies, pyroxasulfone (parent compound only) was identified as a relevant substance for residue definition for dietary risk assessment in agricultural products.

The overall no-observed-adverse-effect level (NOAEL) of a 90-day toxicity study and its additional study in dogs were 2 mg/kg bw/day. The value was the same as one-year chronic toxicity study in dogs.. Taken together, 2 mg/kg bw was the lowest NOAEL in all tests. FSCJ specified an acceptable daily intake (ADI) of 0.02 mg/kg bw/day by applying a safety factor of 100 to the NOAEL.

FSCJ judged it unnecessary to specify an acute reference dose (ARfD), since no adverse effects would be likely to be elicited by a single oral administration of pyroxasulfone.