Uses: synthetic pyrethroid insecticide; mixture of lambda- (LC) and gamma-cyhalothrin (GC). LC is most used; in farming, public health, household, bed nets.

Residues: in breast milk, house dust, food.

Acute toxicity: highly toxic neurotoxin. Symptoms include itching, tingling, burning, prickling sensation of skin especially face; dizziness, headache, nausea, anorexia, fatigue, respiratory irritation; tremors, convulsions, coma, death. Large number of poisonings in US, with dermal, neurological, gastrointestinal and respiratory symptoms of low to moderate severity, and at least 2 deaths; common cause of poisoning in Tanzania.

Chronic toxicity: damages liver, kidney, lungs, heart, spleen (animals).

Neurological: impaired learning (rats); Parkinson's disease-associated changes in brain (rats).

Cancer: mammary tumours in rats; associated with malignant mammary tumours in dogs; promotes MCF-7 human breast cancer cell proliferation; breast cancer risk.

Genotoxicity: genotoxic in animal and human cells.

Endocrine disruption: oestrogenic, antiandrogenic; decreases testosterone (rabbits); inhibits thyroid hormones (rats).

Reproduction: male reproductive toxin; decreases semen quality, weight of testes and epididymis (rabbits); sperm abnormalities, reduced sperm count and motility (rats); blocks spermatogenesis, damages seminiferous tubules.

Immune: immunotoxic; suppresses immune system.

Environmental effects: Aquatic: very high acute and chronic toxicity to aquatic organisms; fish and aquatic invertebrate kills; used to poison wildlife in Kenya.

Terrestrial: highly toxic to bees and beneficial insects.

Environmental fate: Moderately persistent in soil; found in surface water and air. Bioaccumulates in fish.

Hazard to children: acute poisoning, impaired learning, endocrine and immune effects: later in life: breast cancer, male reproductive problems.

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