Methoxychlor

Methoxychlor is an organochlorine insecticide. It has not been registered for use by the U.S. Environmental Protection Agency (U.S. EPA) since 2003. The available data indicate that methoxychlor is persistent in the environment. It has been detected in freshwater fish caught in the U.S., and studies in shellfish, insect, algae, and fish indicate that methoxychlor can bioconcentrate. Methoxychlor has been detected in human biomonitoring studies in blood and breast milk. It has been used against flies, mosquitoes, cockroaches, chiggers, and a wide variety of other insects, and it has been used on agricultural crops (e.g., broccoli, squash) and livestock, and in barns, grain storage bins, home gardens, and on pets.

Methoxychlor passed the human and animal data screens, underwent a preliminary toxicological evaluation, and is being brought the Carcinogen Identification Committee for consultation. This is a compilation of the relevant studies identified during the preliminary toxicological evaluation.

Epidemiological data

- Population-based case-control study in white men with leukemia living in Iowa and Minnesota: Brown et al. (1990)


Animal carcinogenicity data

- Long-term feeding studies in mice
  - B6C3F1 male and female mice (78 week treatment period + 15 weeks on control diet): NCI (1978); reviewed/re-analyzed by Reuber (1980)
  - BALB/c male and female mice (two-year exposure): as reviewed in Reuber (1979a and 1980) and referred to as “FDA studies,” and as reviewed in U.S. EPA (2003) and referred to as “Nelson and Fitzhugh (1951)”
  - C3H male and female mice (two-year exposure): as reviewed in Reuber (1979a and 1980) and referred to as “FDA studies,” and as reviewed in U.S. EPA (2003) and referred to as “Nelson and Fitzhugh (1951)”

- Long-term feeding studies in rats
  - Osborne-Mendel male and female rats (78 week treatment period + 34 weeks on control diet): NCI (1978); reviewed/re-analyzed by Reuber (1980)
  - Osborne-Mendel male and female rats (two-year exposure): as reviewed in Reuber (1979b and 1980) and referred to as “FDA studies,” and as
reviewed in U.S. EPA (2003) and referred to as “Nelson and Fitzhugh (1951)”

- Other long-term studies, as reviewed in Reuber (1980), IARC (1979, pp. 266-268) or U.S. EPA (2003, Section II.A.3)
  - Osborne-Mendel male and female rats (27-month feeding studies): Deichmann et al. (1967)
  - Osborne-Mendel male and female rats (two-year feeding studies): Radomski et al. (1965)
  - Male and female rats (two-year feeding studies): Hodge et al. (1952)
  - C3H/Anf male and female mice (single subcutaneous injection, observed up to 14 months): Hodge et al. (1966)
  - C3H/Anf male and female mice (dermal application once per week for up to 14 months): Hodge et al. (1966)

Other relevant data

- Genotoxicity
  - Mouse lymphoma assay and Chinese hamster ovary cell assay: Oberly et al. (1993)


Reviews

- IARC (1979)


References

Chemical Carcinogenesis Research Information System (CCRIS, 2002)  

IARC, World Health Organization, Lyon, France.


