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P51 : ENDOCRINE DISRUPTORS IN BIOCIDAL PRODUCTS

Duygu Ayabakan Çot, Emine Yener, Burak Kurt, Dr. Muhsin Akbaba
Çukurova University Medical Faculty, Department of Public Health

Endocrine disruptors are of special interest because they mimic, block, or in some way alter the activity of endogenous chemicals that are synthesized by the endocrine system. Besides many other organs, they especially affect the urinary system and the thyroid glands. Endocrine-disrupting chemicals are typically identified as compounds that can interact with oestrogen or androgen receptors and thus act as agonists or antagonists of endogenous hormones. During the last decade, numerous studies have been published, reporting an increase in reproductive organ anomalies, as well as in testicular cancer, and a decline in the relative number of male births, and in semen quality. In this review, the effects of endocrine distruptors on the reproductive health are discussed in the light of the recent literature.

They investigated the TH disrupting potencies of three currently used pesticides in Denmark (prochloraz, iprodione and chlorpyrifos) using the GH3 cell proliferation assay (T-screen). Their results showed that the organophosphate insecticide, chlorpyrifos, could induce TH-like stimulation of the GH3 cell proliferation, whereas the imidazole fungicides, iprodione and prochloraz, inhibited the T3-induced proliferation of the cells. Later studies in rats showed that, prochloraz decreased the concentration of thyroxin (T4) and thyroid stimulating hormone (TSH) in serum of exposed rats.

A cross-sectional study found associations between hypothyroidism and use of organochlorine insecticides, the fungicides maneb, mancozeb and benomyl, and the herbicide paraquat in female spouses of private pesticide applicators in the Agricultural Health Study.

Some other pesticides from the group of organophosphorus, carbamate and urea-type herbicides have been reported to act as AhR agonists in AhR-mediated reporter gene bioassay.

Conclusion: There are many studies showing that many endocrine disrupting substances in biocidal on the market. Use should be regulated, it should be the standizasyo use and research should be increased.

Keywords: Endocrine Disruptors, Insecticides, Organachlorine, Pesticed