Open Letter to Stephen Johnson, Administrator, U.S. Environmental Protection Agency: Ban Endosulfan

We call on the U.S. Environmental Protection Agency to ban all uses of endosulfan

Endosulfan is a persistent, bioaccumulative, highly toxic pesticide that is found in all environmental compartments and in multiple human tissues. Although the European Union and 20 other countries have already banned endosulfan for these reasons, it is still used extensively in the U.S.

About 1.4 million pounds of this chemical are used annually in the U.S.[1] Endosulfan runs off agricultural fields in sediment and contaminates water bodies, where it begins to bioaccumulate in the food chain. Endosulfan and its major degradate are persistent and toxic, and can remain as hazardous waste in the environment for years or even decades after the pesticide is applied.[2] Endosulfan demonstrates environmental fate and ecological effects similar to its chemical cousins, the cyclodiene-like pesticides, that have been either cancelled (toxaphene, mirex, kepone, dieldrin, aldrin, chlordane) or severely restricted (heptachlor) due to their hazardous nature.

Residues of endosulfan are detected as a contaminant on a very wide array of food products, including apples, tomatoes, cucumbers, pickles, zucchini, green peppers, olives, raisins, cantaloupe, prunes, squash, potatoes, canned pears, spinach, green beans, and butter.[3] Endosulfan is found in all environmental compartments: rain, fog, surface water, ground water, and soil. Atmospheric transport of endosulfan has resulted in contamination of Arctic regions distant from use areas.[4,5] Residues of endosulfan have been detected in multiple human tissues including blood, fetal placenta, breast milk, and mammary adipose tissue.[6–10]

A review of the peer-reviewed science demonstrates that endosulfan is both an endocrine disruptor and a neurotoxicant.[11–13] Numerous studies have consistently demonstrated that endosulfan behaves physiologically as an anti-androgen.[14] The effects of endosulfan are most pronounced in immature animals whose reproductive systems and brains are still developing.[15,16]

In its 2002 assessment, the U.S. Environmental Protection Agency (EPA) calculated that the cancellation of endosulfan would have negligible impacts on agriculture.[17] For example, cancellation on Florida tomatoes (approximately 34,900 lbs active ingredient annually) would incur a loss of only 0.02–0.7% of the total value of production. The impact on tobacco is similarly minimal. For cotton, the crop for which the most endosulfan is used, EPA determined that cancellation would incur a negligible loss of only 0.1–2.4% ($216,000–$3.8 million) of the total value of production.

We ask that the EPA cancel all uses of endosulfan without further delay, because it is persistent, bioaccumulative, and highly toxic. We support the petition of the Natural Resources Defense Council (NRDC) to ban endosulfan and revoke all tolerances. [18]

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Note: Unless otherwise indicated, individual signatories' institutions are given for identification purposes only and do not constitute an endorsement on the part of the institutions of information contained in this letter.

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Notes

1. U.S. EPA Endosulfan Updated Risk Assessment. Federal Register. 2007 November 16;72(221). Docket ID HQ-OPP-2002-0262-0067. Available at: www.regulations.gov
2. The EPA assessment reported that endosulfan parent compound has a half-life in soil of 57 and 208 days for the α and β endosulfan repectively, the half life of the endosulfan sulfate is 1336 days. The degradate is of similar toxicity to the parent compound. Endosulfan bioconcentration factors in fish range from 2,400X to 11,000X. US EPA Endosulfan Updated Risk Assessment. November, 2007. Docket ID HQ-OPP-2002-0262-0067. Available at www.regulations.gov
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