

TRIBAL PESTICIDE PROGRAM COUNCIL

Northern Arizona University
PO Box 15004
Flagstaff, AZ 86011-5004
tppcwebsite.org

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Charles Smith, Division Director, Registration Division
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Avenue, NW, Washington, DC 20460

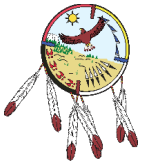
Re: Isoxaflutole: New Use on Herbicide Resistant Cotton (EPA-HQ-OPP-2020-0202)

Dear Mr. Smith,

We appreciate the opportunity for the Tribal Pesticide Program (TPPC) to comment on the U.S. Environmental Protection Agency's (EPA's) proposed registration of the herbicide, isoxaflutole for a new use on isoxaflutole-resistant cotton. The TPPC is a member-based organization with 106 members from 67 Tribes and tribal organizations, whose activities are funded by a cooperative agreement with the EPA. The Council serves as a tribal technical resource, and provides a forum for dialogue between Tribes and the EPA on program and policy development relating to pesticides issues and concerns. Assistance provided to Tribes includes support in building tribal pesticide programs and conducting pesticide education and training, and the preparation of resources for Tribes interested in specialized issues such as Integrated Pest Management and pollinators. Through its interaction with the EPA, the TPPC keeps Tribes informed of developments in the regulation of pesticides and pesticide use, and provides feedback to the EPA on such matters from a tribal perspective. Although the organization always seeks to represent consensus perspectives on any given issue, it is important to note that the views expressed by the TPPC may not be agreed upon by all Tribes. Further, it is important to understand interactions with the organization do not substitute for government-to-government consultation, which can only be achieved through direct communication between the federal government and Indian Tribes.

On behalf of the Tribal Pesticide Program Council (TPPC), I submit these comments on EPA's proposed registration of the herbicide, isoxaflutole for a new use on isoxaflutole-resistant cotton.

- With one fully fluorinated carbon atom, isoxaflutole is classified as a per- and polyfluoroalkyl substance (PFAS) by the Organisation for Economic Co-operation and Development (OECD), the European Chemical Agency, and several US states (e.g., Connecticut, Maine, Minnesota, Rhode Island). While EPA uses a narrower definition of PFAS that does not include compounds such as this, TPPC members remain concerned about the long-term environmental and health effects of these compounds and oppose registrations that allow for an increase in their use.
- For the breakdown of the PFAS in the environment, the strong carbon-fluorine bonds of the $-CF_3$ group makes it difficult for aerobic bacterial to process, and the benzoyl or aromatic ring increases the chemical stability causing breakdown to stall. The breakdown in the environment halts at the substituted benzoic acid or benzamide stages, turning the degradate into a persistent "dead-end" residue in soil and water (<https://pubmed.ncbi.nlm.nih.gov/8349093/>, <https://www.tandfonline.com/doi/full/10.1080/07388551.2021.1977234>).



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- Ionizable fluorinated aromatic rings retain high lipophilicity and water mobility, increasing how far these transformation products migrate through groundwater and surface runoff (<https://pmc.ncbi.nlm.nih.gov/articles/PMC9734374/>).
- Isoxaflutole breaks down into a diketone nitrile derivative called DKN. Both parent herbicide and DKN are highly persistent and mobile. The metabolite DKN has been detected in both groundwater (for example in Minnesota: <https://comptox.epa.gov/chemexpo/datadocument/1496318/>) and surface water (in multiple Midwest states: https://www3.epa.gov/pesticides/chem_search/cleared_reviews/csr_PC-123000_4-Nov-02_a.pdf).
- While the initial parent compound is highly regulated, their persistent CF_3 ring degradates can accumulate in aquatic ecosystems, posing ongoing risks of chronic cellular or biochemical stress to aquatic life and algae. Since the degradate is lipophilic, it could result in biomagnification up the food chain, which could impact tribal communities through cultural pathways such as eating fish or using bear fat as medicine (since the bears eat the fish) (<https://academic.oup.com/etc/article/42/2/367/7729574>, <https://pmc.ncbi.nlm.nih.gov/articles/PMC9734374/>).
- EPA has expressed strong concern in the past about non-target impacts of isoxaflutole, stating in a 2000 memo that “These data definitively show that water, contaminated with isoxaflutole residues at concentrations far in excess of that known to cause adverse effects in non-target plants, runs off treated fields” (https://www3.epa.gov/pesticides/chem_search/cleared_reviews/csr_PC-123000_7-Jun-01_a.pdf).

With these concerns in mind, the TPPC opposes the registration of isoxaflutole for a new use on isoxaflutole-resistant cotton, and urges EPA not to go ahead with the registration.

Once again the TPPC appreciates this opportunity to comment on EPA’s proposed registration of the herbicide, isoxaflutole for a new use on isoxaflutole-resistant cotton. If you have any questions, please contact TPPC coordinator Mark Daniels at mark.daniels@nau.edu or 928-523-8897.

Sincerely,

Renee Keezer
TPPC Chairperson