

Cleaning up our Drinking Water: the Case for Banning Triclocarban and Triclosan

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Thesis

Triclocarban and triclosan are antimicrobial compounds found in products ranging from writing utensils to toothpaste. They have negative effects on human health, drinking water, and ecosystem processes. There should be a federal ban on their use in general consumer products.

Background Analysis

The demand for antimicrobial chemicals in the U.S. has been rising over the course of the past two decades and is projected to continue to increase¹ in coming years, driven by an increase in public awareness of foodborne illnesses.^{2,3} As a result, antimicrobial compounds, specifically triclocarban and triclosan, are found increasingly in oral hygiene products, makeup, kitchenware, clothing, and even calculators.⁴ Since they are so ubiquitous, consumer exposure is high, and large amounts enter wastewater treatment plants via human urine or greywater, which is household wastewater excluding toilet discharge (including wastewater from showers, sinks, and washing machines).

In the U.S., wastewater treatment plants discharge approximately 1.1×10^5 to 4.2×10^6 kg of triclosan into the environment.⁷ The compound has been known to alter the ecologies of soils^{8,9,10} and freshwater ecosystems,^{11,12} has been found in these environments¹³ at concentrations that are toxic to algae,¹⁴ and has been detected in 58 percent of freshwater streams in the U.S.¹⁵ Further, it is an endocrine disruptor,¹⁶ has been found in human breast milk,¹⁷ disrupts thyroid action, drives antibiotic resistance,¹⁸ and has potential neurotoxic effects.¹⁹ Triclocarban, as a triclosan analog, exhibits a similar antimicrobial chemical mechanism of action. These negative effects led the FDA to ban the use of these chemicals in hand and body washes in September 2016. Banning them in these products, while a good first step, does not address the problem, nor the antibiotic resistance and human health problems associated with exposure to these chemicals in other products.

Talking Points

- The widespread use of triclosan and triclocarban leads to antibiotic resistance, which is associated with increased mortality, particularly in individuals with chronic illnesses.
- Triclosan and triclocarban pollute drinking water and lead to human health issues. They are endocrine disruptors, potential neurotoxins, and are also toxic to aquatic organisms.
- The ubiquity of triclosan and triclocarban leads to increased costs in health care, loss of productivity, and the loss of environmental resources.

KEY FACTS

- The ban on triclosan and triclocarban would save millions of dollars in health care and lost productivity fees associated with antimicrobial resistance every year.
- This ban would ensure environmental resources and drinking water sources are protected.
- If these compounds were banned, important fisheries would be protected in the long run from hormonal imbalances and breeding problems, livestock would be healthier and more productive, and there would be fewer losses from disease.
- The ban would only have short-term effects on the large corporations that produce products that contain these chemicals. Companies would have time (approximately one year) to adapt and change their practices.

Policy Idea

The widespread usage of triclocarban and triclosan has no long-term benefits. Eradicating them completely from general consumer products would be beneficial to human health and help mitigate environmental issues such as endocrine disruption in freshwater fish. Thus, they should be banned in all general consumer products. There is a precedent for a similar national ban, with the FDA's ban in 2016. There should be an initial focus on local legislation, which can help push federal legislation toward the ultimate goal of a national ban on these chemicals.

Policy Analysis

According to the WHO, antibiotic resistance is “one of the biggest threats to global health, food security, and development today.”²⁰ The widespread presence of triclosan and triclocarban in drinking water and soils and exposure to these compounds makes them particularly significant as drivers of antibiotic resistance. Antibiotic resistance has made treating serious infections in hospitals increasingly difficult²¹ and affects the most vulnerable in society: cancer patients, people with rheumatoid arthritis, people who undergo dialysis treatment, and organ transplant recipients.²² Antibiotic resistance is also associated with the increased spread of diseases leading to the deaths of tens of thousands of Americans each year.²³ According to the CDC, health care costs stemming from antibiotic resistance are approximately \$20 billion a year, with an additional \$35 billion a year in lost productivity.²⁴ Triclosan is also highly toxic at the bottom of aquatic food chains, which can have long-term effects on fisheries and freshwater productivity.²⁵ Furthermore, access to clean drinking water is associated with positive economic growth.²⁶ Protecting freshwater resources from triclosan and triclocarban pollution thus has multiple economic benefits. The consequences of inaction are immense. Failing to ban these chemicals will cause us to mismanage natural resources, experience the associated long-run economic consequences, and directly increase the risk of mortality for many Americans. Banning these chemicals would address all of these problems at their source. A scaled-back policy approach would mitigate the negative effects to some degree, but not as much as a ban would.

Next Steps

On a federal level, the FDA could propose and issue a final rule to ban triclosan and triclocarban nationally. Because they negatively impact society as a whole, it is important to organize the community and lobby local and national governments. This ban would also benefit marginalized communities who are victimized by environmental racism and lack access to clean drinking water. Thus, it is also important to involve groups such as the National Congress of American Indians, which is an organization that has a history of advocating for improving drinking water potability for Native Americans. The key targets of this policy are to eliminate triclosan and/or triclocarban in as many products and regions as possible. Individuals should write to their relevant representative or senator in support of the ban. If these compounds are banned at the state level, there will be greater grounds for a federal ban.

End Notes

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²³ Ibid.

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