

# Sewage treatment removes widely used home and garden insecticides from wastewater

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Even though sewage treatment plants are not designed to remove tiny amounts of pesticides, they do an excellent job of dealing with the most widely used family of home and garden insecticides, scientists reported here today. Their study on pyrethroid insecticides—used in more than 3,500 products—was part of the 246th National Meeting & Exposition of the American Chemical Society (ACS).

"We found that advanced sewage treatment reduced the levels of pyrethroids by more than 97 percent," said Kurt N. Ohlinger, Ph.D., who presented the results of the study. "That's a reduction to less than one part per trillion, and pretty impressive. Conventional [treatment processes](#) remove about 89 percent, something we knew from previous research. Based on these results, we do not expect the trace amounts of pyrethroids in sewage treatment plant effluent to be toxic to even the most sensitive aquatic life."

Use of pyrethrins, derived from chrysanthemum flowers, and the related synthetic pyrethroids, has been on the increase during the last decade. They are replacing organophosphate [pesticides](#), which are more acutely toxic to birds and mammals, with uses that include home insect control, insect-repellant clothing, dog and cat flea shampoos, mosquito control and agriculture.

The growing use led Ohlinger and colleagues to check on the effectiveness of advanced sewage treatment processes in removing pyrethroids from wastewater from a sewage treatment plant. They are

with the Sacramento Regional County Sanitation District in California, which was implementing advanced [sewage treatment](#). They knew that high levels of pyrethroids in treated water (which flows out of sewage facilities and into lakes and streams) could harm aquatic life.

"Although conventional wastewater treatment processes were not designed to remove trace pyrethroid residues, we found in an earlier study of our existing treatment processes that the treatment processes were quite effective at pyrethroid removal," he explained. "We wanted to see if advanced treatment processes were even more effective. The results provide welcome reassurance."

Provided by American Chemical Society

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