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# Pesticide Contamination Higher in North American Songbirds Than South or Central American Songbirds

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BLOOMINGTON, Ill. — Although a ban on the use of organochlorine pesticides such as DDT has been in effect in the United States for more than three decades, studies at Illinois Wesleyan University have shown that North American songbirds show a higher frequency of contamination than do songbirds from South or Central America.

Given Harper, chair of Illinois Wesleyan's department of biology, said that the differences in the levels of contamination were unexpected and suggests that North America is the source of the contamination.

"Considering that some of these pesticides continue to be used in some South America countries, we thought that the incidence would be higher in songbirds that spent their lifetimes in these areas," Harper said.

Harper cited two possible reasons for the results. First is the heavy use of organochlorine pesticides such as DDT in the United States prior to its ban in 1972. Because these compounds are water insoluble, they tend to persist in the environment for long periods of time, Harper said. Because they are fat soluble, they tend to concentrate in living organisms, he added.

"When we examined samples from Guyana, we did not see levels as high as we did from the United States," said Harper. "Our use of these pesticides was much heavier than in Guyana which, as a relatively poor country, did not have the economic ability to use the pesticides in the way they were used in this country."

Another possible reason for the higher contamination levels in North American birds, said Harper, is the phenomenon of global fractionation. "When these pesticides are used, they volatize into the atmosphere and are progressively deposited at more northern latitudes," said Harper. "The colder weather makes it harder for such compounds to escape again into the atmosphere, as they do more easily in tropical regions."

Harper is conducting an ongoing study of North American birds from three different latitudinal gradients and, based on results thus far, anticipates that birds that spend more time at northern latitudes will have higher pesticide levels.

Most previous studies of the pesticide contamination in birds have focused on raptorial birds such as hawks, falcons, and eagles. Harper chose to look at songbirds in part because of the gap in the literature on that subject but also because some species of songbirds have declining populations.

"We have not been looking specifically at cause and effect," said Harper. "However, the levels of contamination that we were finding in one species, the dickcissel, are approaching the levels known to have physiological impact."

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