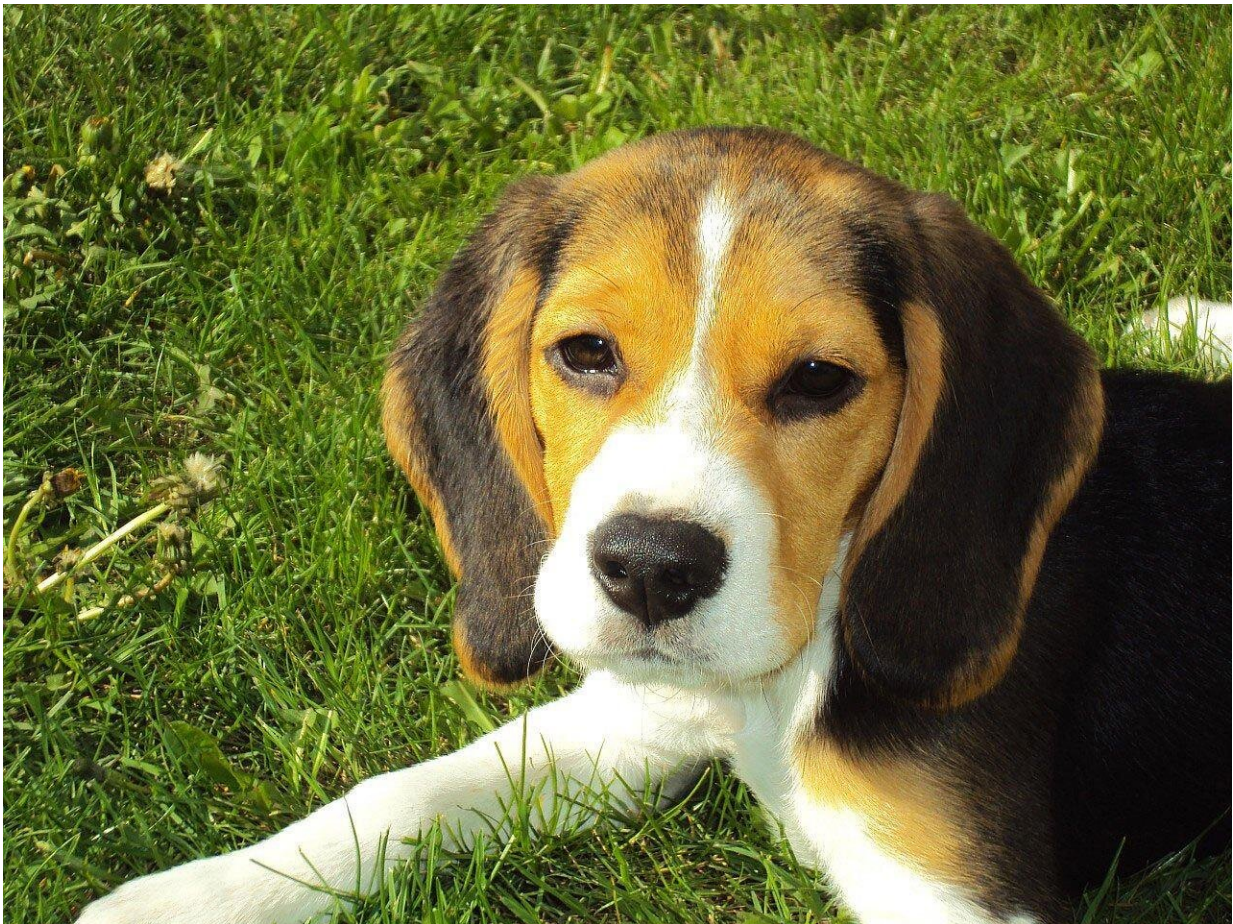


# Handwashing is a major source of pet pesticide pollution in UK rivers, finds study

February 2 2024, by Hayley Dunning

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A new study reveals that handwashing in the weeks after spot-on flea

and tick treatments is the largest source of pet pesticide pollution in rivers.

The paper is [published](#) in the journal *Science of The Total Environment*.

The study's authors, from the University of Sussex and Imperial College London, are calling for a review of the regulatory framework and prescribing practices to address toxic pet pesticides washing into rivers.

Fipronil and imidacloprid are highly toxic pesticides that are no longer approved for use in outdoor agriculture, but continue to be widely used in pet flea treatments, typically applied to the back of the pet's neck (known as spot-ons).

The researchers found that wastewater from sewage treatment works is a major source of fipronil and imidacloprid pollution in rivers. They conclude that pesticides used in flea products on domestic pets are washing down household drains, in concentrations exceeding safe limits for wildlife.

## **Significant source of contamination**

The researchers collected samples from 98 dogs treated with spot-on fipronil or imidacloprid and evaluated the contribution of owner handwashing, dog bathing and washing of dog bedding to household sewage and subsequent wastewater pollution. The research found that washoff of pesticides occurred across all three pathways.

Owner handwashing was the largest source of emissions with fipronil or imidacloprid detected in all tests on pet owners for at least 28 days after a spot-on application to their pet. Current guidelines advise that owners should not touch pets in the 24 hours following product administration, but this research shows that pollution is occurring continuously for the

entire duration of action of the product.

First author Rosemary Perkins, a Ph.D. student and veterinary surgeon from the University of Sussex, said, "This research confirms that fipronil and imidacloprid used in spot-on flea products are important surface water pollutants. With around 22 million cats and dogs in the UK, we urgently need to rethink how these products are regulated and used."

Co-author Professor Guy Woodward, from the Department of Life Sciences at Imperial, said, "Despite these chemicals being banned from outdoor agricultural use for several years, we are still finding them in UK freshwaters at levels that could harm aquatic life. This paper shows how domestic pet flea and tick treatments, a largely overlooked but potentially significant source of contamination, could be polluting our waterways."

## **Reviewing practices**

This study builds on previous research conducted by the Sussex researchers, which found that fipronil was detected in 98% of freshwater samples, and imidacloprid in 66%, and [a paper](#) by the Imperial researchers that showed these chemicals are reaching urban rivers in concentrations that are known to harm aquatic life.

The researchers are now calling for a review of regulatory and prescribing practices, as current pet flea products do not consider the extent of river pollution from down-the-drain washoff prior to regulatory approval. The research has demonstrated that even when product instructions are followed, substantial emissions to the aquatic environment are still generated.

The British Veterinary Association has recently issued a [policy statement](#) recommending that veterinary businesses should avoid blanket year-

round parasite treatment policies and instead empower individual vets to have informed discussions with their clients.

Professor Dave Goulson from the University of Sussex, who supervised the research, commented, "These two chemicals are extremely potent neurotoxic insecticides and it is deeply concerning that they are routinely found on the hands of dog owners through ongoing contact with their pet. Pet owners will also be upset to learn that they are accidentally polluting our rivers by using these products."

**More information:** Rosemary Perkins et al, Down-the-drain pathways for fipronil and imidacloprid applied as spot-on parasiticides to dogs: Estimating aquatic pollution, *Science of The Total Environment* (2024). [DOI: 10.1016/j.scitotenv.2024.170175](https://doi.org/10.1016/j.scitotenv.2024.170175)

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