



PFAS in drinking water: Safety questions about gardening, livestock, and pets

What are PFAS chemicals?

Per- and polyfluoroalkyl substances (PFAS) are a group of chemicals that have been used for decades in many products, such as firefighting foam, water-resistant clothing, stain-resistant carpets, non-stick pans, and food packaging.

Why are we concerned about PFAS?

PFAS don't break down naturally and some can build up over time in animals, fish, birds, plants, and people. Studies in laboratory animals (rats, mice, monkeys) have shown that PFAS can be toxic to animals. Studies of people with workplace or environmental exposures suggest that PFAS may also harm human health.

Washington state recently adopted state action levels for five PFAS compounds in drinking water. State action levels tell us when to take action to protect people's health. However, these action levels only apply to people, not pets and livestock. Animals may react differently than humans to PFAS. Animals also differ in body weight, water intake, and how quickly PFAS leave their body.

Is my water safe for pets and livestock to drink?

We don't know yet. Safety guidelines for pets and livestock have not been established for PFAS in drinking water.

More research is needed to know if PFAS levels in Washington drinking water can harm pets or livestock.

In laboratory animals (rats, mice, monkeys) some PFAS can injure the liver, kidney, thyroid, and reproductive organs. They can also weaken immune response, affect development, and cause tumors. Most of these effects have been observed at relatively high levels of exposure. We don't know if they will happen in other animals and at the lower levels of exposure to PFAS in drinking water. PFAS build up over time in the body, so there may be higher levels of PFAS in animals that live longer.

If you are concerned about your animal's health, talk to your veterinarian.

How can I protect my pets and livestock?

If the water fed to pets and livestock has PFAS, you can reduce their exposure by providing a clean source of drinking water. You can also consider installing a filter to remove PFAS from the water. PFAS can leave the body of most animals faster than in humans. PFAS levels in your animals will go down after removing the PFAS source.

PFAS may build up in animal feed crops like hay and corn silage when PFAS are in the irrigation water or soil. If you are growing your own livestock feed, consider testing your crop and sharing your results with your veterinarian. Special filters can remove PFAS from irrigation water if the results are of concern.



Is it safe to eat meat, eggs, and milk from animals that have PFAS in their drinking water?

Not necessarily. If consumed, PFAS, like PFOS, PFOA, and PFHxS, can be absorbed by chickens, meat and dairy animals, and transferred into their eggs, meat, and milk. Eating or drinking these animal products regularly could be an important source of an individual's or family's PFAS exposure over time.

There are no regulations or advisories to guide consumption of animal products. However, you can reduce your exposure if you:

- avoid eating organ meats. PFAS tend to build up in the liver, kidney, and blood.
- switch your animals to clean water or install a filter to remove PFAS from their drinking water. This will allow the animals to begin getting rid of PFAS from their bodies, eggs, and milk.

Can I eat my home-raised fruits and vegetables if PFAS are in the irrigation water?

Limited data suggests that eating garden fruits and vegetables is not a significant source of PFAS exposure when garden water meets federal or state advisory levels for PFAS in drinking water. We're still learning about how plants in a home garden might take in PFAS when water levels of PFAS are higher.

In general, PFAS from soil or irrigation water can be absorbed through the roots of plants. Some types of PFAS tend to stay in the roots, while other types of PFAS more easily distribute to shoots, leaves, and fruits. Specific plants also vary in how much PFAS ends up in the edible portions.

If you are concerned, here are some ways to minimize exposure:

- Wash or scrub all dirt off produce before eating to avoid swallowing soil. PFAS may be in soil particles.
- Peel and wash root vegetables before eating.
- Add clean compost to your garden soil. Increasing the organic content of your garden soil can reduce the amount of PFAS your plants pick up from the soil.
- Use rainwater or install a filter to remove PFAS from garden irrigation water.

Where can I find more information on PFAS?

- Washington State Department of Ecology – visit ecy.wa.gov and search for 'PFAS'
- Washington State Department of Health – visit doh.wa.gov and search for 'PFAS'
- U.S Food and Drug Administration: fda.gov/food/chemical-contaminants-food/questions-and-answers-pfas-food
- U.S. Environmental Protection Agency (EPA): epa.gov/pfas
- Centers for Disease Control and Prevention (CDC) Agency for Toxic Substances and Disease Registry: atsdr.cdc.gov/pfas

COMMERCIAL OPERATIONS

Can I sell meat, eggs, and milk from animals that consumed drinking water with PFAS in it?

There are no currently established standards that limit PFAS in commercial animal byproducts. The WSDA Food Safety Program will address concerns about PFAS in the water of commercial food production and processing operations on a case-by-case basis.

Can I sell crops if they were irrigated with water that contains PFAS?

There are no current standards for allowable PFAS in irrigation water or in commercial crops. If you raise and sell crops, contact the Washington State Department of Agriculture for guidance.

Can I process and sell food and beverages if the water ingredient had PFAS in it?

If water was used in food or beverage production and later found to have PFAS, an individual evaluation is needed to address whether those products can be sold. The WSDA Food Safety Program will work with commercial food operations to address this concern on a case-by-case basis.

There are no current standard for levels of PFAS in food products. WSDA Food Safety staff can be reached at: foodsafety@agr.wa.gov or (360) 902-1876.