

Winterization tips offered for pesticide application equipment, supplies

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As winter approaches, it is time to store pesticides and prepare sprayers for long-term storage, says Montana State University Pesticide Education Specialist Cecil Tharp.

Applicators should clean their sprayers thoroughly, drain pesticide residual from spray tanks, decontaminate sprayers and inspect sprayer components to avoid damage from long-term storage in freezing temperatures, Tharp said.

Applicators should start by washing the outside of their sprayers. Then they should rinse the inside of their spray tanks by pouring water into the tanks, Tharp said. The water should amount to at least 10 percent of the sprayer's capacity. The applicators might also add various [cleaning agents](#) to the water to help remove persistent pesticides.

Many pesticide product labels give recommendations for use of specific cleaning agents, Tharp said. Many sulfonyl urea, organophosphate and carbamate pesticides may be easily removed by addition ammonia which will raise the pH of the rinse solution and increase water solubility. Other labels recommend adding chlorine bleach to increase the breakdown of pesticide products into inactive compounds.

It is crucial that applicators never mix bleach and ammonia, Tharp emphasized. Doing so is highly dangerous and creates a deadly [chlorine gas](#).

Some pesticide product labels suggest adding fuel oil or kerosene to the water to remove oil soluble pesticides, including esters and emulsified concentrates, Tharp continued. Applicators who add fuel oil or kerosene should follow them with a detergent rinse to remove oily residue, however.

Once they clean their sprayers, applicators should dispose of pesticide residual (rinsate) only by applying as a spray onto a crop/site on their pesticide product label, Tharp said.

Applicators may also pour excess rinsate into a container and dispose of it as product waste. Applicators should contact their Montana Department of Agriculture Officer at (406) 444-5400 for product waste directions.

After the final rinse, applicators should inspect nozzles, screens, valves, hoses, and tanks for wear or damage, Tharp said. To protect sprayer pumps and lines from corroding and freezing over the winter, he suggested they circulate a 50-50 mixture of antifreeze and water through the entire system for at least five minutes.

With the antifreeze mixture still in the system, applicators should then remove pressure gauges and check valves and store them in a marked container at room temperature over the winter.

Applicators should plug assemblies to keep any antifreeze mixtures from leaking out, Tharp said. Then they can then remove nozzles and screens and place them into a marked container filled with lightweight oil, such as kerosene or diesel fuel.

They should correctly plug those assemblies, as well, to keep the antifreeze mixture in the lines through the winter.

Applicators should store the sprayer in a sheltered location away from liquid and dry fertilizers, which will corrode paint and hardware, Tharp said. Freezing doesn't generally affect dry pesticide formulations, but they should be stored in a dry location. Liquid pesticides, however, may freeze, resulting in the separation of the active ingredients from carriers and possibly reducing the pesticide's effectiveness. Liquids that coagulate or crystallize may further plug spray lines.

Some frozen pesticides keep their effectiveness if applicators follow specific steps when thawing and re-dissolving the suspension, Tharp said.

Pesticide products have different freezing temperatures because of the hydrocarbon solvents they contain, Tharp said. Pesticide product labels often list a minimum storage temperature, as well as other pertinent information about frozen [pesticides](#).

Provided by Montana State University

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