



Sprayer tank clean out

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With in- crop spraying right around the corner, sprayer tank clean out is an important topic to address on your farm. Many farms have done the same clean -out routine for years and not had any issues with contaminating residues in the tank resulting in crop damage. Although the old saying "If it ain't broke, don't fix it" definitely has some merit, in this case it is good to consider whether your cleanout routine is adequate. When you consider the way chemicals have changed over the years, especially the higher reliance on oily surfactants in modern chemicals, it makes sense why we need to pay attention to spray tank cleanout.

The goal in cleaning the tank is to remove and dilute the previous chemical formulation as much as possible to prevent buildup and carryover of residues which can cause crop damage on non-target crops.

Safety first Always wear safety gear before working around chemicals.

Although it can be a hassle, we all know that it is no fun spilling chemical on your clothes and skin. What's even worse is smelling it all day in the sprayer cab. I use a long waterproof coat, a plastic face shield to prevent back splash when spiking jugs, and of course rubber gloves (No judgment on me looking like a total dork please☺).



1) Get The Previous Product Out of The Tank ASAP

In my experiences spraying, I have always tried to get the previous product out of the tank as soon as possible. Spraying the extra product out of the tank is the *safest* and most *environmentally responsible* way to rid your tank of left over product. Tom Wolf of AgriMetrix Research and Training, states that spraying a crop twice is usually safe, as all herbicides must be registered to be sprayed at twice the rate in order to be registered by the Pest Management Regulatory Agency (PMRA). If one lets the product sit in the tank overnight before beginning the cleanout, there is more time for product to congeal and adhere to the tank and plumbing components.

I like to open the valve ends on my filters to empty the buildup in the bottom of the filter canister. There is often chemical residue or green slime from dug-out water in here. Next I like to go along my booms and



Ball valve on main filters

empty out all the chemical product within the boom plumbing. Our farm runs a Patriot 4420 sprayer, with valves on each boom section to empty out product. Usually I will go to the sprayer and tip the boom ends up so that gravity allows all of the product to drain out. Then I raise the centre rack, and tip end of booms down to force the product to drain out the other way. You would be amazed at how much product comes out by doing this both directions!

While the tank is empty and no pump is running, I will remove all the filters on the sprayer, and grab the handy dandy toothbrush- this is the most valuable tool in filter cleanout! This brush is just small enough to get it in the centre of the filter and scrub all of the residue and gunk out of the filters. A pail filled with rinsing solution is an easy way to clean filters and nozzles.



Valves on each nozzle

Filter cleaning supplies



Tipping boom ends up, with centre rack down

2) Begin Rinsing Process:

I used to always put about 1000 gallons of water to our 1200 gallon tank, thinking that a larger volume would clean all areas of the tank better, but this spring I changed up my cleaning methods a bit. Recent research has shown that two or three smaller rinses is more effective for rinsing the tank than one large volume rinse. I always crank the agitation up to high and allow the cleaning solution to agitate for as long as possible.

Generally I try to do three 400 gallon rinses:

1st fill- *Cleaning product plus 400 gallons water*

2nd fill- *Cleaning product plus 400 gallons water*

3rd fill- *400 gallons of just water to rinse, and run through plumbing system to check nozzles and for leaks*

****The longer you allow the cleaning solution to soak into the plumbing components and screens for cleanout- the better. Recommendations do suggest that rinsing solution should be left in the tank overnight. This will allow more chemical deposits to loosen up. If an operator is forced to speed up the tank cleaning process due to limited time, they must understand that there is risks involved in doing a less thorough tank cleaning.**

Cleaning products:

All Clear

This **Detergent cleaner** is specifically designed to remove pesticide deposits and other debris, including oily substances from booms, filters, and nozzles. *All clear* will *neutralize* Phenoxy herbicides (Group 4's such as MCPA and 2-4-D are the most common), and *solubilize* Sulfonylureas. Prepass (florasulam) is another group 2 chemical that has caused some residual issues for farmers, so *All Clear* should be used to clean out this product as well.

Label rate is 0.25L of All Clear/100L of water

- If you are adding 400gal of water, you will only need **3.78L of cleaning product**

**Decontamination rate is double this → 7.57 L of cleaning product. Use this rate if you have had residue issues, or to do a more thorough cleaning.*

Flush

This is an **Ammonia based** cleaning solution. This product is used to raise the pH to increase solubility and therefore clean the system of debris. Flush contains 7% ammonia.

Label Rate is 0.50 L of Flush/100L of water

- If you are adding 400gal of water, you will need exactly **7.57 L of cleaning solution**.

A few “Rules of Thumb”

USE All Clear (or other detergent cleaner) IF...

- Solution contains an adjuvant
- Solution contains a milky looking component –called an emulsion
- With liberty
- With MOST group 2 herbicides (there are a few exceptions based on PH of chemical solution).

USE Flush (or other ammonia based cleaner) for all purposes other than the above, as well as with...

- Simplicity, Varro, and Velocity M3, Express, Refine, Muster, and Spectrum- All group 2's containing thiencazone-methyl which has poor solubility at low pH.

3) Draining The Rinse Solution:

After I have ensured all nozzles are working correctly, and there are no leaks in the system, I drain out all of the rinse water, fold in the booms, and get ready to fill the tank with chemical solution for spraying!

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