Pesticides and Water Quality
North Carolina Agricultural Extension Service
1988: Fact Sheet 2

DESIGN FOR IN-FIELD SPRAYER RINSE SYSTEM TO REDUCE PESTICIDE WASTE

The Problem

Unused diluted sprays and rinse water (rinsate) are two types of pesticide waste which can present disposal problems. Dumping or draining unused diluted sprays and rinsates is illegal and presents a serious threat to groundwater and the environment. When unused pesticides are dumped onto one area of ground or into a hole or pit, the soil becomes saturated with pesticides and loses its natural ability to absorb and biodegrade them. Pesticide-saturated soil is particularly dangerous near farm drinking water supplies.

Since pesticide mixes can be legally and safely sprayed on the field containing a crop for which they are labeled (not to exceed label rates), it makes sense to clean out spray equipment before leaving the field.

A Solution

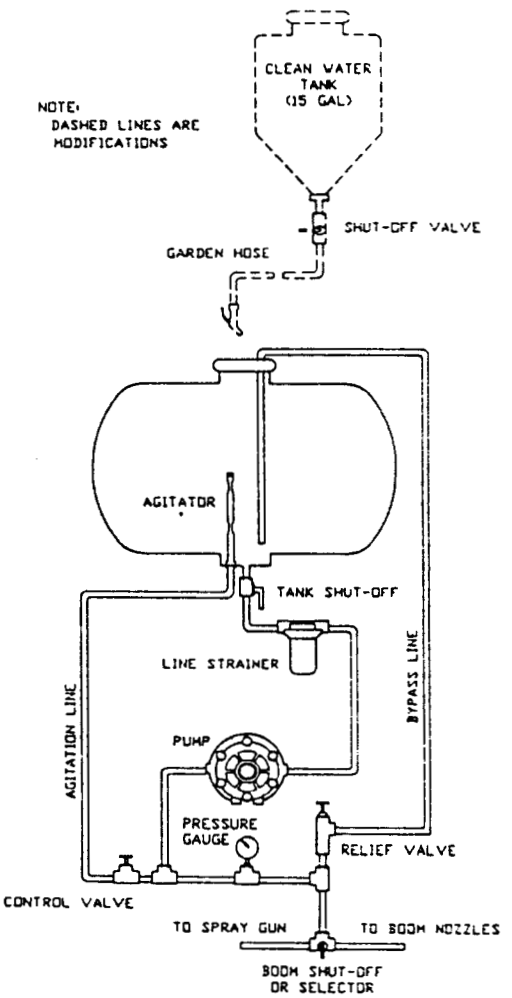
A system has been designed to allow rinsing in the field. Two options are available: a gravity flow system and a pressure flow system. Both involve mounting a clean water tank on the sprayer for rinsing the sprayer tank and lines before leaving the field.

The rinsate can be sprayed on the field borders, row ends, or back over a portion of the crop as long as labeled rates are not exceeded. Any residual rinsate that cannot be pumped out becomes diluted, reducing the risk of contaminating groundwater.

How It Works

A 15-gallon, funnel-bottom, plastic or fiberglass tank is mounted securely to the sprayer frame as shown in the following diagrams.

If it is mounted above the main spray tank, gravity causes the water to flow through a hose nozzle to rinse the tank. Clean water is available any time from the regular discharge hose.



GRAVITY FLOW OPTION

In the pressure flow system a clean water tank may be mounted level with or below the main spray tank.

Attach the clean water tank to the suction line with a tee and a valve. Attach a hose and nozzle to the sprayer line on the pressurized side of the pump with a second tee and valve. **Label this hose so it will not be used for a clean water source.**

By turning the valves, water can be drawn from the clean water tank through the sprayer pump and directed into the sprayer tank for rinsing. The pressure flow system may clean more effectively than the gravity flow system.

Clean water may be obtained from this system by attaching a second hose and valve between the water supply and the sprayer system. This may be useful for hand washing or emergency use.

Cost

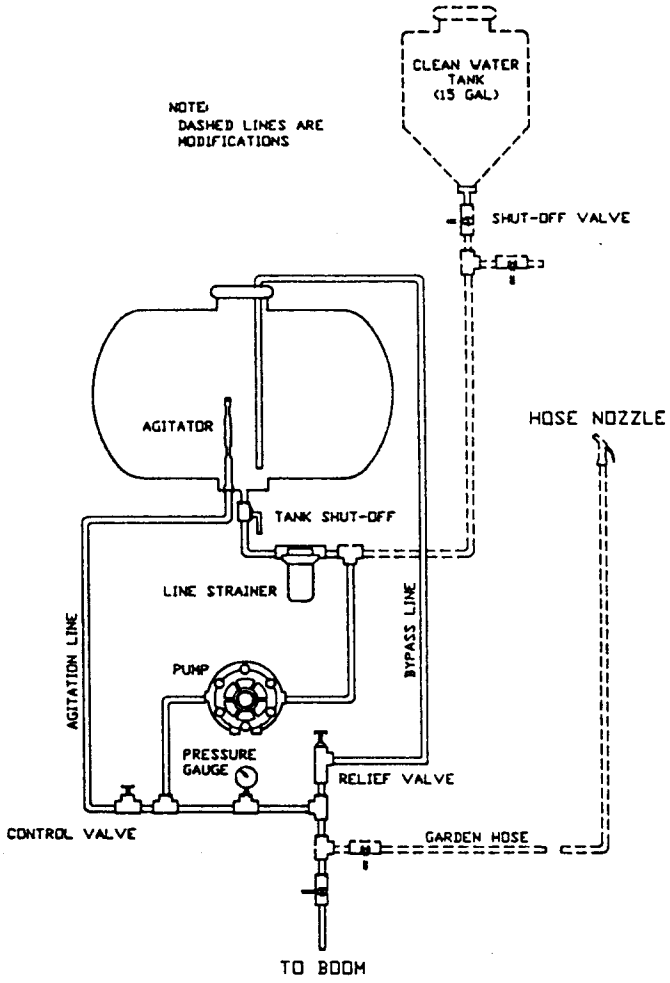
Cost of the rinse tank and components for either sytem will vary with make and model of sprayer. Components of the type shown here are available from most local spray equipment dealers for less than $100.

Summary

This *in-field sprayer rinse system* is simply a clean water-spray tank flush system. It is an easy and inexpensive way to reduce the concentration and volume of pesticides. It also helps protect the family water supply and the environment from unnecessary contamination by pesticides.

Remember these two points:

- Pesticide mixing and loading areas should be at least 100 ft away and not uphill of the well or spring area.
- Rinsing is more effective if done before the pesticide dries on the walls of the tank and lines.



PRESSURE FLOW OPTION

Pesticide And Water Quality Fact Sheets

1 Chemigation Practices to Prevent Ground Water Contamination
2 Design for In-Field Sprayer Rinse System to Reduce Pesticide Waste
3 Pesticide Container Disposal
4 Disposal of Unused Pesticides, Tank Mixes, and Rinsewater
5 Preventing Well Contamination by Pesticides
6 Protecting Mountain Springs from Pesticide Contamination
7 Preventing Pesticide Pollution of Surface and Ground Water
8 Reducing Pesticides and Saving Money Using Integrated Pest Management (IPM)
9 Disposal of Aircraft Rinsewater
10 Protecting Ground Water from Contamination by Pesticides

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Funding for this project was provided by the N. C. Pollution Prevention Program
Department of Natural Resources and Community Development