THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE

SP268F

Small Engines

Selection and Maintenance of Hand Sprayers for Home and Garden

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Compressed air hand sprayers are very popular with homeowners and gardeners. Normally made in one to three gallon capacities, these sprayers work extremely well for treatment of small areas with pesticides. Most work on the principle of compressed air, making their operation and maintenance a fairly simple procedure. However, users do have problems with these sprayers and many fail to follow some basic guidelines that will prolong the life of the sprayer, as well as insure successful application of chemicals.

The following information is not intended to replace the owner's manual or the user's manual that is normally acquired when a sprayer is purchased. Rather this information is intended to complement these manuals and answer some questions that may not have solutions in the manual.

Points to Consider when Purchasing a Sprayer

Size

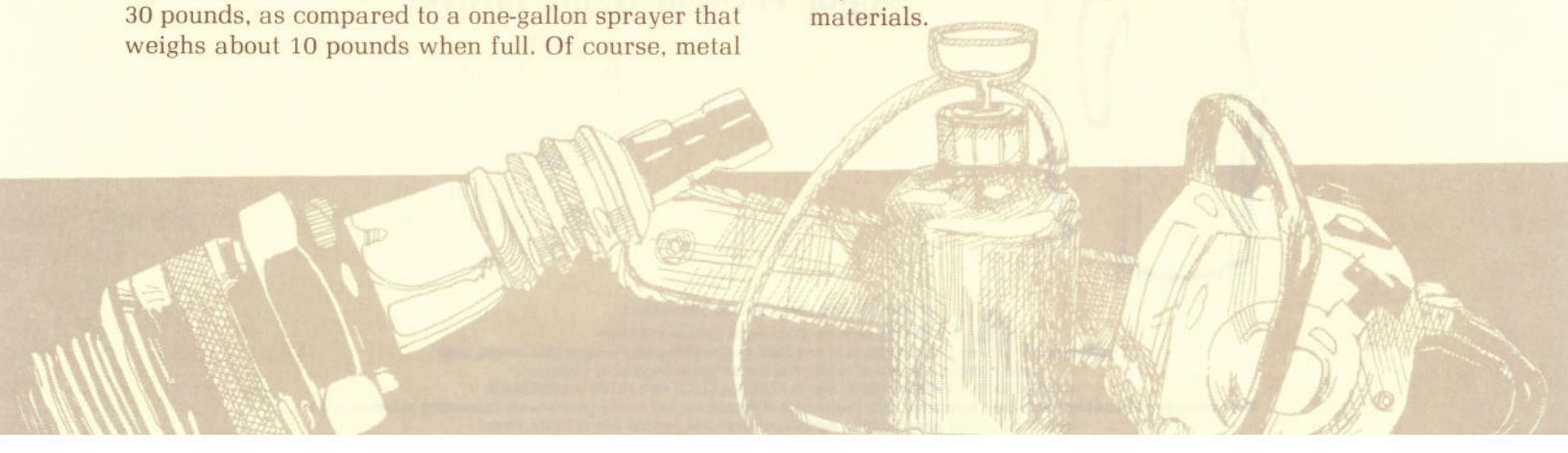
Although size is not a major factor in selection, it should be considered with respect to the size of the area to be sprayed, the distance to the nearest water supply for refilling and the physical stature of the person using the sprayer. A one-gallon sprayer will have to be refilled about three times as often as a three-gallon sprayer. This can be a nuisance when spraying larger areas when several refills are required. Also, a three-gallon sprayer when full will weigh about 30 pounds, as compared to a one-gallon sprayer that weighs about 10 pounds when full. Of course, metal sprayers will weigh more than equal size plastic models.

Material of Construction-Tank

Most sprayers on the market today are made of plastic, fiberglass, stainless steel, galvanized steel or aluminum. Galvanized steel and plastic are the most common and are relatively inexpensive to purchase. When properly cared for, both will give several years of satisfactory service. Stainless steel is much more expensive than galvanized or plastic, but it will last much longer. Corrosive chemicals should be used in stainless sprayers, otherwise sprayer life will be short. Many of the chemicals we use today are corrosive and will cause galvanized steel to rust and scale with only a few uses. Rust and scale will flake off inside the tank and plug the nozzle tip frequently.

Hoses

Some chemicals can be very corrosive and can deteriorate many kinds of plastic and rubber hoses. Hoses on sprayers should be resistant to chemical action and should be relatively flexible for ease of use. Reinforced hoses will give better service and resist bursting when compared to non-reinforced hoses. Care should be taken not to crimp or bend hoses sharply as damage can occur. Hoses should be rinsed thoroughly and stored away from sunlight. Ultraviolet rays from the sun will rapidly deteriorate most hose materials.



Control Valves and Nozzles

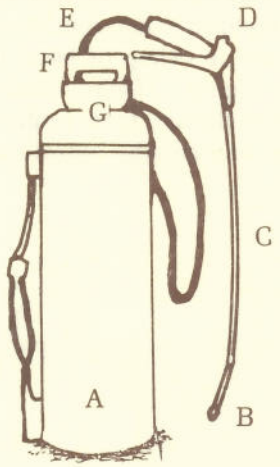
Most valves and nozzles currently are made of brass, aluminum or plastic. Brass and aluminum are more desirable for durability than plastic. Plastic nozzles have a long life and resist corrosive chemicals, but solvents such as gasoline or kerosene will soften the plastic. Brass valves and nozzles are a good choice for the average conditions around most homes.

Recommendations for Use

1. Wear protective clothing and goggles.
2. Do not stand directly over the top of the tank when using the pump.
3. Read the label on chemicals and use according to directions.
4. Fill tank only ¾ tull or to the fill level mark on the tank. USE CLEAN WATER.
5. Insert pump into tank opening and turn to lock and seal.
6. Pump the plunger until plunger is difficult to work.
7. Adjust nozzle by turning right or left until desired spray pattern is found.
8. If you have problems, check the TROUBLE SHOOTING TABLE in this publication.
9. Do not leave spray material in the tank after use. Clean the sprayer thoroughly with clean water. Spray some through the hose and nozzle to clean.
10. Remove pump from sprayer to store. Hang tank upside down to drain in a dry place.

Troubleshooting Sprayers

Trouble	Remedy
Sprayer leaks at closure	1. Clean all foreign particles from pump gasket and closure surface. 2. Remove old gasket and replace with new.
Spray material overflows through pump barrel or pump handle rises when handle is unlocked.	Remove and clean pump, check valve — and pump valve seat. Replace if necessary.
Pressure escapes around pump rod on open top sprayer when sprayer is filled and pumped up.	Tighten pump barrel to cover plate. If not effective, replace gasket and again tighten pump barrel to cover.
Hose leaks at tank.	Tighten hose clamp. Repair or replace hose.
Spray extension or nozzle plugged.	Remove nozzle and clean. If still plugged, remove extension and clean.
Hose leaks at shut-off.	Shorten hose and secure with clamp or replace hose.
Sprayer pump does not compress air.	1. Oil plunger cup. 2. Replace with new plunger cup.
Nozzle drips when spray control is closed.	Remove extension rod and clean shut-off by spraying clean water through valve. If valve stem tip is worn, replace with new valve stem assembly.
Sprayer tank leaks or syphon tube leaks.	Replace tank.



Major Parts of Hand Sprayer

A. Tank
B. Nozzle Tip
C. Extension Rod
D. Spray Control
E. Hose
F. Hand Pump
G. Fill Opening

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