

To help prevent skin cancer, use sun-block preparations when you are outdoors and avoid midday sun.

Check spray gear now, save money later

LANCASTER — Farmers and custom applicators can save pesticide dollars this year if they take time now to inspect their spray equipment for operating efficiency.

As elementary as it sounds, the key to economical and efficient pesticide use is to apply materials only at the rate needed. No farmers violate this intentionally, but defective spray equipment may apply more or less pesticide than needed.

For example, applying too little herbicide usually leads to poor weed control and yield reductions. On the other hand, applying too much herbicide may increase potential for crop injury, in addition to wasting herbicide dollars.

Roller and centrifugal pumps are most commonly used with herbicide sprayers, but both have advantages and drawbacks.

Roller pumps produce moderate flow rates at high pressures, are fairly easy to maintain, and they will operate efficiently at tractor PTO speeds. However, the rollers of the pump can wear and must be replaced after continuous use.

Abrasive materials like wettable powders and limestone can cause extensive wear and should be avoided in roller, gear, industrial vane or other rotary-type pumps.

Abrasive materials can be

used safely in centrifugal pumps, as well as in diaphragm or squeeze hose pumps. Centrifugal pumps also deliver high volumes of liquid at relatively low pressures.

Centrifugal pumps require a high speed power source, however, and usually will not operate efficiently at tractor PTO speeds.

Some type of speed-up mechanism, such as belts and pulleys or gears, is needed to increase PTO speed and pump speed.

Constant agitation in the spray tank is essential to insure an evenly mixed herbicide.

Without sufficient agitation herbicides can settle to the bottom of the tank causing uneven application; the spray mixture coming from the top of the tank will not contain enough herbicide to control weeds, while the bottom part of the tank will contain a higher concentration of herbicide that may cause crop injury.

Thorough, yet moderate, agitation is needed to mix herbicides properly. Excessive agitation when tank mixing, however, may cause one of the chemicals to settle in the spray tank.

Proper agitation in the spray tank insures even herbicide application continuity.

A faulty pressure regulator may cause inconsistent weed control in

the same way insufficient agitation does.

By increasing or decreasing pressure, volume of herbicide applied will be increased or decreased. A pressure regulator is essential for maintaining consistent delivery of the spray mixture.

Growers can choose from three types of nozzle tips, all of which deliver various spray patterns: flat spray, cone spray and flood spray nozzles.

There are two basic types of flat spray nozzles: flat fan and even spray.

The first is designed for broadcast applications and may have an "F" designation. The spray of the adjacent flat fan nozzles must overlap for even distribution.

An "E" designation applies to even spray nozzles designed for band spraying. It delivers an equal amount of herbicide across the spray pattern.

Both types of flat spray work best at a pressure above 20 psi. Pressure above 40 psi should be avoided to reduce spray drift.

Cone spray nozzles are usually designed to operate at higher pressures than flat spray nozzles to produce fine spray droplets.

There are two general classes of cone nozzles: hollow cone and solid cone, both of which have large orifices to reduce clogging. The solid cone nozzle mainly

operates at extremely high pressures and is best suited for insecticide applications.

Operating efficiently at a pressure range of 30 to 50 psi, the hollow cone nozzle delivers a small volume of spray well suited to post emergence applications.

The swirl chamber — a popular type of hollow cone nozzle — can operate at pressures below that of flat spray nozzles and still deliver an even coverage of pesticide.

For broadcast applications of preplant incorporated and preemergence herbicides, a small volume of liquid is sufficient to give adequate coverage of the soil and good weed control results. Therefore, flat fan and swirl chamber nozzles are usually preferred.

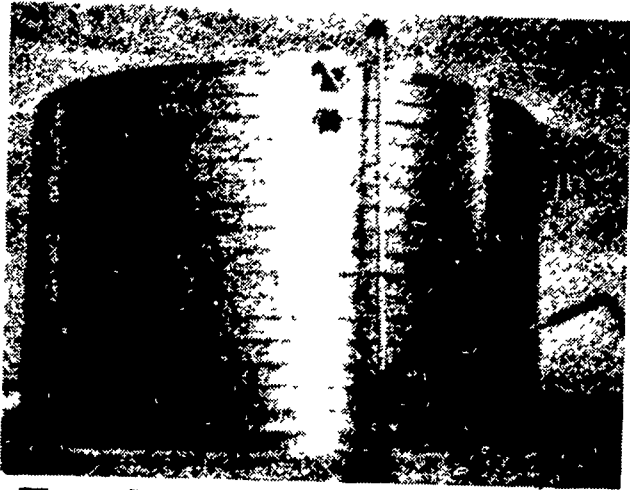
Flood type nozzles are useful for high volume coverage at low pressures; capacity is measured at 10 psi. These nozzles deliver a spray of large droplets in relation to flat spray and cone nozzles. This is an advantage where spray drift could be a problem.

The flood type nozzle's spray pattern must overlap the adjacent nozzle's pattern by 50 percent for even herbicide distribution.

Nozzle tips are probably the most neglected and abused component of the sprayer. Yet, they are the most critical factor concerning even distribution of herbicides on foliage or on soil surface.

Nozzle tips wear when used heavily. The orifice in the nozzle tips will become larger, delivering more herbicide than needed.

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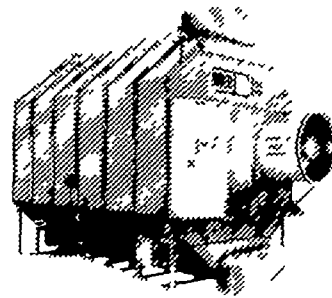
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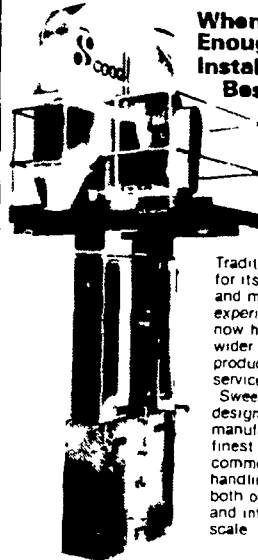
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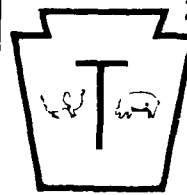
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