

# All About Sprayers

By O.W. "RED" KROMER

A sprayer for application of chemicals is one of the most essential machines for golf course maintenance. Many courses have two or three sprayers, using one exclusively for herbicides and another for fungicides. This means each sprayer is supplied with the proper nozzles and calibrated to apply the correct amounts of spray mixtures. If it is not economically feasible to own two or three machines, then one good commercial type sprayer should be obtained and be adaptable for both hi and low pressures.

Chemical weed control requires the exact amounts of chemical, uniformly applied. At first it may seem complicated to apply a specific amount of chemical per 1000 sq. ft. However, it is quite simple if taken a step at a time. The components of a sprayer and their functions should be thoroughly understood, as well as the variables, which must be controlled to give an accurate spray application.

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First, the sprayer. The tanks should be corrosion resistant, have a large filler opening for cleaning and have jet or mechanical agitator. The pump can be low pressure — roller, gear, rubber impeller centrifugal or turbine — with a capacity in gallons per minute at least 50 percent greater than the nozzle and jet agitator requirement (if a jet agitator is used). This allows for pump and nozzle wear. The ideal machine would have a multiple piston pump with a mechanical agitator. A piston pump machine can be used for hi-pressure machinery cleaning, tall tree spraying or fire fighting and is easily repaired when worn. A sprayer should have an accurate gauge, preferably brass, glycerin filled with not over 100 p.s.i. calibration for accuracy around 30 to 60 lbs. — the low pressure spraying range. If the machine is also a hi-pressure unit, the low pressure gauge can be replaced with a hi-pressure gauge or a valve installed below the gauge to shut it off for hi-pressure spraying.

The pressure regulator should have sufficient capacity so that low pressure can be obtained and be sensitive so it controls the pressure accurately. A dual low and hi-pressure system can be installed on a hi-pressure sprayer, allowing the low pressure regulator and gauge to be used for boom spraying. When the boom is shut off, the hi-pressure system with its regulator and gauge can be used for hand spray gun work. With a dual system, the hi-pressure regulator should be made so it can be triggered to relieve the hi-pressure for low pressure work.

Nozzles must be chosen for size, from the nozzle chart, to give the gallonage rate desired at the recommended pressure and travel speed. Most nozzles are rated at 30 p.s.i. and 4 m.p.h. and 20" spacing. A 20" nozzle spacing is preferred over 10" spacing because it has a larger orifice, therefore it is more difficult to clog. Also it is more accurate and produces larger droplets for herbicide work — larger droplets give better weed kill and are less affected by wind. The matching screen can have coarser mesh allowing the fine particles to pass through the screen and nozzle. The deflector or flooding type nozzle, as it is called (a misnomer), is preferred because it has a cylindrical orifice, which retains its accuracy at least 10 times the life of the original fan type nozzle. In addition to this, it continues to spray a broad fan throughout its useful life, where with the conventional fan nozzle, the spray pattern gets narrower and narrower as the discharge orifice wears, finally shooting a solid stream of much greater volume.

The deflector type has the added advantage of producing larger droplets, which produce better weed kill (by University test) and are less affected by wind.

The boom we prefer is a smooth, stainless tube of sufficient size — 3/4" I.D. or larger so the end nozzles receive the same pressure as the one near the feed hose. It is also preferable if the nozzles come out of the side of the boom instead of the bottom, as this allows dirt particles and precipitated chemical, bypassed by the main screen, to settle to the bottom of the boom rather than going right into the nozzle screen.