PREVENTING BACKFLOW FROM YOUR FERTILIZER INJECTOR

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All potable water systems must be protected against backflow to insure that contaminated water is not mixed with water that is used for human consumption. Backflow or backsiphoning occurs when a negative pressure develops causing water that has been contaminated to be drawn back into the supply lines.

The National Plumbing Code which has been adopted in most states requires that backflow preventers be installed on any supply fixture which has an outlet end which may be submerged. Some examples are: a hose that fills a spray tank or barrel, a fertilizer injector, and an equipment washtub.

The most commonly used backflow preventer is the vacuum breaker shown in figure 1. It is a combination check valve and air relief valve in one inte-

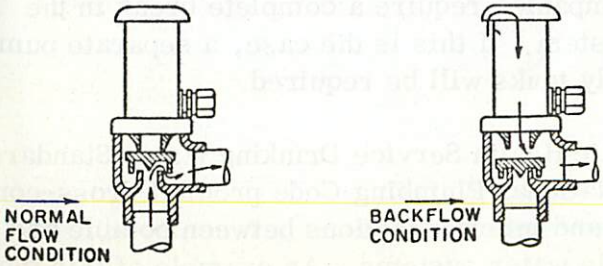

FIGURE 1

gral unit. If the pressure in the water supply lines drops below a predetermined level, the check valve will close and shut off the water supply. With the check valve in the closed position, the air relief part of the unit is open, allowing air to enter the system which breaks the vacuum created by the negative pressure in the supply lines and prevents backflowing of the water into the potable water supply. This type of valve should be installed between the last control valve of the supply system and the fixture being served. For example, the vacuum breaker should be installed just prior to the intake to a fertilizer injector. The cost of a vacuum breaker for a 1-inch line is approximately $13.00.

In low pressure watering systems (less than 5 psi) an elevated mixing tank is sometimes used to supply water to the drip tubes or trickle hose. Fertilizer is often mixed in the water to supply nutrients to the plants. A space equal to at least twice the diameter of the supply pipe is required between the outlet of this pipe and the highest possible water level in the tank (figure 2). This air gap provides positive protection against backflow.

If you are supplied by a municipal water system, check the local regulations prior to installation as some companies require a complete break in the water system. If this is the case, a separate pump and supply tanks will be required.

Public Health Service Drinking Water Standards and the National Plumbing Code prohibit cross-connections and interconnections between potable and nonpotable water systems. An example of this type of connection is where pipes are connected so that

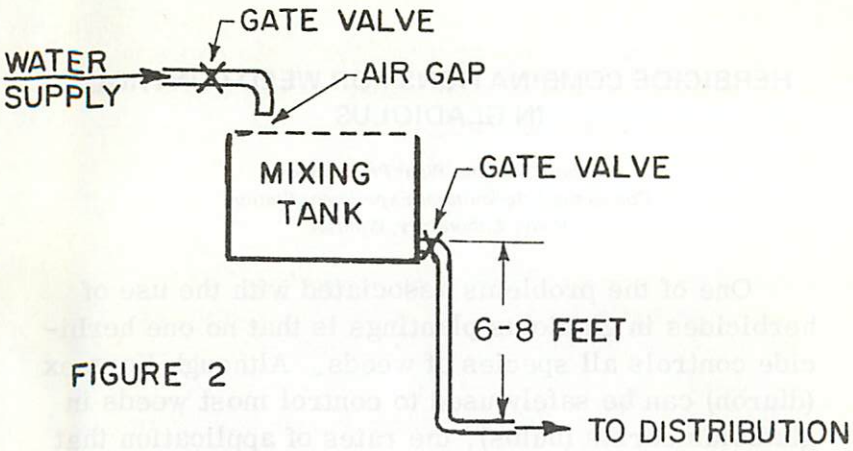

FIGURE 2

water can be supplied to a greenhouse from either a well, pond or stream, depending on which valve is open. Another example is where a water system is connected so that either municipal water or water from a private system supplies the greenhouse. These types of systems are dangerous, as valves may leak or may be inadvertently left open. All cross-connections and interconnections between potable and nonpotable water systems should be eliminated.