

# Why Did My Pesticide Fail?

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Most gardeners use some type of chemical to control weeds, insects and diseases. The companies that market these chemicals have spent millions to hundreds of millions of dollars funding extensive tests to determine the optimum application methods for their products. Unfortunately, many gardeners operate under the premise that “instructions are for others.” There are report after report of incidences where people complain that they were unable to control the insect, disease or weed despite the use of the proper chemical. In almost all incidences, the fault lies not with the pesticide, but with the actions of the pesticide applicator.

There are three overlapping problems which can be considered:

1. Application of the wrong material
2. Incorrect application
3. Poor management

If these three areas have been considered and ruled out, then (and only then) can you, in good conscience, question the manufacturer’s claims and representations about the product’s faults.

## Application of the Wrong Material

**Incorrect diagnosis.** Many of today’s chemicals are very specific for the pest or problem that they control. It is for this very reason that they are good materials to use. The chance of major harmful environmental effects is minimized by specificity. However, this specificity requires that the applicator be very certain that the problem is diagnosed properly. At the very least, the applicator must know the type of problem being encountered before selecting the correct broad-spectrum chemical to use.

**Incorrect usage.** Label directions are there for a purpose (Figure 1). Many problems occur as a result

of not following directions precisely. The old adage “if one works well, two will work better,” certainly does not apply to pesticides. If you have to dilute a pesticide, do not ‘guesstimate’ your measurements.

**Outdated or improperly stored chemicals.** Chemicals vary in the length of time that they may remain active. Environmental factors such as light and temperature may have an effect on stability. Storing chemicals improperly, for example in warm, humid conditions or with or without other chemicals, may change their effectiveness, usually in a detrimental way.

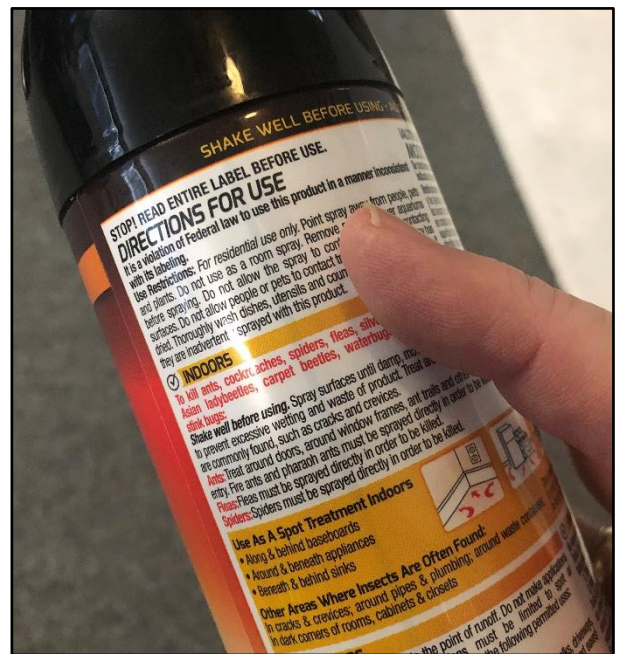


Figure 1. Pesticide labels are meant to be followed, not ignored.

Manufacturers have good reasons for putting expiration dates on their labels. They are legally informing you that their product loses its effectiveness after a certain period of time. Outdated

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materials should be disposed of in an approved, legal manner.

**Tank Mixes.** To save time, it is common to mix various chemicals together in a single sprayer. Saving time is an attractive notion, but in some cases problems may be encountered. Chemical effectiveness may be diminished, or, worse, still, phytotoxicity may occur. It is well worth the effort to find out what is safe before mixing expensive materials or wasting the time applying only to get poor control or injured plants.

**Contamination.** Poor equipment cleaning may give you tank mixes that were never intended. Even minute quantities of some materials can cause others to clog, become phytotoxic, or neutralize the effectiveness of the spray.

An easy way to prevent problems is to use separate spray tanks for herbicides and insecticides. Clearly marking the tanks for their intended use warns every one of potential problems.

## Incorrect Application

**The wrong rate.** Label information represents a great amount of testing as to the amount of chemical which should be applied. To prevent possible problems not only must the concentration of chemical in the spray be correct, but the amount reaching each plant must be correct. Irresponsible application can result in environmental damage and potential liability.

**Poor coverage.** The chemical generally must reach the pests or weed if it is to be effective. Sufficient coverage allows the chemical to reach all affected parts so that the problem can be controlled. Poor coverage leaves areas untreated and problems uncontrolled.

**Weather.** Weather can reduce pesticide effectiveness in several ways: rain can wash off the chemical before it has penetrated or high temperatures and/or winds can rapidly dry the

chemical before it has penetrated. These problems can be minimized by properly timing the treatment or at least by recognizing them when they happen.

## Poor Management

**Late initial application.** It is almost always easier to control a small problem than a large one. The control of an infestation is always easiest and most likely to succeed when it is undertaken before the pest reaches epidemic proportions. Often knowing the pest's life cycle allows control at a susceptible life stage, even if all other stages are resistant to chemical control. Information about pest biology is usually available at the county extension office or on reputable websites.

**Lack of follow-up.** Once is often not enough in pest control. Follow-up applications of the same or complementary sprays control the organisms missed the first time. Some pests may be in a stage resistant to chemical control at the first application but may be susceptible later. If it rains or irrigation comes on too soon after pesticide application, a follow-up is essential since the materials may have been removed.

**Poor records.** Without record keeping, each pesticide application is almost like starting new. Good record keeping should keep track of a product's efficiency, any harmful side-effects and the development of any resistant strains of the pest. You need know the exact response of your plants under your conditions to maximize your spraying's effectiveness. Remember no matter how well a chemical was tested before release, it was not tested under your particular conditions.

**Relying on chemicals alone.** Even the most effective chemicals need help. Healthy plants are much more resistant to problems than unhealthy ones. Keep track of pest levels and know the pest biology. This allows treatment when the product will do the most good. Integrated pest management (IPM) ensures that every pest control option available has been considered. It requires you to manipulate the pest, the pest host, and the environment to prevent epidemic pest populations from developing.