University of Nevada Cooperative Extension

Fact Sheet 11-58

Is it Time to Use a Pesticide?

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What is a Pest?

There are many definitions of the word "pest," and personal perceptions of pests can often be very different. What some people tolerate, others cannot stand. A pest might be annoying (ants), damaging to plants (rabbits), a health concern (ticks) or a cause for fear (black widow spiders). However, relatively few pests cause significant injury to plants, so pesticides are not needed in many cases.

A pesticide is a substance that destroys, prevents or repels a pest. There are many types of pesticides. Herbicides kill plants, insecticides kill insects, fungicides kill fungal organisms, miticides kill mites and rodenticides kill rodents.

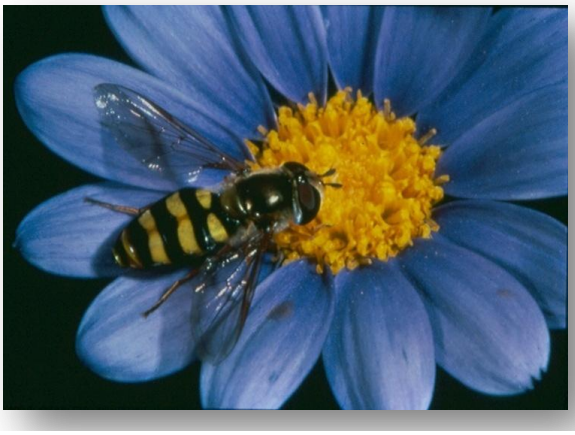
Non-living Pests

Often, plant problems in northern Nevada result from non-living factors. These include weather, wind exposure, lack of water or excess water, soil type, soil compaction, poor drainage, improper plant selection for the site, restricted roots or poor cultural practices.

Since many plant problems are not caused by living pests, it is important to determine the cause of the problem or symptoms before using a pesticide. The following questions will help you determine whether pesticides are needed, and how to use them safely and effectively.

Squash bug damage (photo from bugwood.org)

Damage from a non-living stress (photo from U.C. Davis)



A syrphid fly is a beneficial insect, not a pest. Pest identification is important to avoid damage to beneficials (photo U.C. Davis).

This photo shows woodpecker holes in pine, not insect damage (photo B. Culbert).

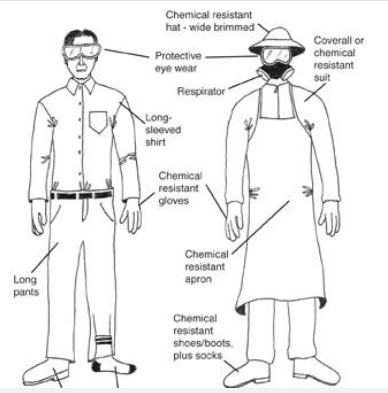
Fireblight in pear is a disease caused by a bacteria (photo U.C. Davis).

Solving a Plant Problem – What to Consider

1. Has the plant, insect or cause of the damage been properly identified?
2. What are the signs and symptoms of damage?
3. How bad is it? Can you tolerate this level of damage if it's not harming the plant?
4. How long have you noticed the symptoms? Did they come on suddenly or gradually? When did they first appear?
5. What is the overall health of the plant? Are the roots exposed or damaged? Is there evidence of physical damage to the plant?
6. Where is the damage on the plant? Only in certain spots, or throughout? What exactly do you see that looks abnormal? Is this normal for the plant species?
7. What insects or other pests are commonly found on this type of plant? What plant problems are prevalent in the area (for example, iron deficiency, drought stress, susceptibility to wind damage or sunburn)?
8. Are there other plants with the same symptoms? Are they all the same type of plant, or different species? Did they all show the same symptoms at the same time, or did you notice a gradual spread?
9. Where in the yard is the plant located? What characterizes the microclimate, soil type and drainage? Consider sun, shade and wind exposure, for example.
10. How long has the plant been in its current location? Is it a recent transplant, or a long-term inhabitant?
11. How do you water the plant, and how deeply do you water? What is the schedule and amount of water applied? If you use a drip system, where are the emitters located, and how many are there for each plant? Is the plant watered all through the year, or just seasonally?
12. What activities have occurred near the plant, such as construction, pesticide spraying, painting or fertilizing?
13. What would you like to accomplish in applying a pesticide?

Questions to Ask Before Using Chemical Controls on Weeds

1. Have you positively identified the weeds?
2. What is the life cycle of each weed? (annual, biennial, perennial)
3. Where are they growing? (for example: turf, garden, driveway)
4. How many weeds are there? (a few plants, a patch, an acre)
5. How long have they been growing in that location?
6. Have you considered all other possible solutions, such as hoeing, pulling or cutting?
7. If chemical controls are needed, have you selected a product that will be effective on your weeds with the least possible toxicity to other organisms (the least toxic product that will do the job)? Look for the signal word “Caution” for the least toxic materials. “Danger” is the most toxic and “Warning” has moderate toxicity.
8. Have you read the label carefully? Are you following all label directions?
9. Is the product labeled for use at the particular site on this type of weed?
10. When is the best time in terms of plant development to apply the chemical?
11. How long do you want the effects to last? Although prolonged bare ground may seem desirable initially, trees and other non-target plants may suffer.
12. Is the weather appropriate (not windy, not likely to rain, no standing water, not too hot (over 85 degrees) or too cold (under 60 degrees)?
13. Is the soil so dry that the weeds will not absorb the herbicide? Are plants covered with dust?
14. Are you applying the appropriate amount of chemical by the best method?
15. Do you understand all necessary safety requirements, and have you followed them carefully (gloves, hat, eye protection, long sleeves, long pants, shoes)?
16. Have you kept mixing and storage areas away from water bodies and wells?
17. Do you have the right equipment for the application?



Questions to Ask Before Using Chemical Controls on Insects

1. Have you found and positively identified insect pests that are causing the problem?
2. What species of plants are infested?
3. Are site conditions or gardening practices increasing the damage or causing the problem?
4. How many are there? (a few, many, lots)
5. Is the level of damage bad enough to require control, or is the damage at an acceptable level? Can you tolerate some blemishes?
6. Is the problem unlikely to go away if you don't take action?
7. Have you tried other less-toxic methods of control? (for example, spraying plants infested with aphids with a strong jet of water)
8. If chemical controls are needed, have you selected a product that will be effective on the insects with the least possible toxicity to other organisms (the least toxic product that will do the job)? Look for the signal word "Caution."
9. Have you read the label carefully? Are you following all label directions?
10. Is the product labeled for use at the particular site on this type of insect?
11. Will the insecticide be effective if applied at this stage in the insect's growth?
12. Are beneficial insects present that will be harmed by an application of insecticide? What can you do to protect them?
13. Are you applying the appropriate amount of chemical by the best method?
14. Do you have the right equipment for application?
15. Do you understand all necessary safety requirements, and have you followed them carefully wearing the appropriate personal protective equipment (gloves, hat, eye protection, long sleeves, long pants, shoes)?
16. If a respirator is required, do you have the correct type, and has it been fitted to your face by an expert?
17. Have you kept mixing and storage areas away from water bodies and wells?

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