

# Recognize, Control Garden Plant Disease

**UNIVERSITY PARK (Centre Co.)** — Few things are as frustrating for the home gardener as poor plant growth and nonproductive or dying plants. A major cause of plant problems in the garden is disease.

Many plant diseases can be minimized or eliminated if you know how to recognize them, says Dr. Alan MacNab, professor of plant pathology in Penn State's College of Agricultural Sciences.

"Unhealthy plants usually result from some form of external irritation," say MacNab. "Injury, or instantaneous irritation, can be caused by animal or insect chewing, lightning, freezing, burning, excess or inappropriate chemicals, and careless use of garden tools.

"Disease, on the other hand, is a product of continuous irritation. This can be caused by fungi, bacteria, viruses, nematodes, parasitic

plants, temperature extremes, pesticides, improper pH, or incorrect amounts of water, light or nutrients."

MacNab says accurate diagnosis is the first step in overcoming a plant problem. Once the cause is known, steps can be taken to overcome the problem or prevent its spread.

When diagnosing a plant problem, there are several questions to consider:

- What are the symptoms? Usually, a few specific symptoms develop, which can indicate a specific problem.

- Are insects evident? Insect problems are easy to diagnose when insects are visible. But if insects are small or have left the plant, diagnosis must be based on symptoms or microscopic observations.

- What plants are affected? Organisms that cause problems prefer some plants over others. Most infest only related plants or one plant species. Adverse environmental conditions generally affect a wide range of plant species.

- What is the pattern of symp-

tom development? Symptoms appearing on widely separated plants may indicate that an organism was introduced by seeds, transplants or flying insects. Symptoms appearing in only one part of the garden suggest problems specific to that area, such as soil-borne organisms, poor soil drainage or improper planting depth.

- Does the problem appear to be spreading? Many disease-causing organisms, such as mites, insects or microorganisms, can move from leaf to leaf or plant to plant.

- Did symptoms appear after you performed specific gardening practices? We often cause plant problems inadvertently. Excessive fertilization near plants can cause root burn and plant wilting. Deep cultivation or pulling large weeds near plants can damage roots and cause water stress, resulting in wilting and leaf curling. Herbicides can damage garden plants when a sprayer is contaminated from prior use or drift occurs when spraying a surrounding lawn.

- Did symptoms appear following specific weather conditions?

Sunlight and wind can dry out "soft" transplants that are inadequately prepared for outdoor weather. Sunlight can burn tomatoes and peppers when their leaves fail to shade the fruit. Frequent rain promotes reproduction of some disease-causing bacteria and fungi. Wet soil can cause root rot and plant wilting.

If observation or laboratory analysis indicates that a microorganism is the culprit, MacNab says there are several steps you can take to control the problem or prevent its recurrence in the future:

1. Choose a garden site with ample sunshine, air circulation and drainage. Many fungal and bacterial diseases are most serious in chronically wet conditions.

2. Change the garden's location occasionally, and always practice crop rotation within your garden plot. Many diseases, especially soil-borne diseases, are most severe when the same or related crops are grown in the same area year after year.

3. Fertilize and lime your garden as recommended by soil test

results. Plants grown with balanced fertility and optimum pH are less susceptible to diseases than excessively weak or vigorous plants.

4. Grow disease-resistant varieties when available and suitable for local use.

5. Use disease-free seed and transplants. Obtain seed from a reputable company. Obtain transplants from a greenhouse operator who uses disease-free seed and soil.

6. Control insects.

7. Control weeds. Perennial weeds near the garden often are the initial source of viruses in the spring. Dense weeds in the garden promote fungal and bacterial harvest diseases.

8. Pull and destroy diseased plants soon after harvest. Compost or plow under crop refuse as soon as possible after harvest to promote decomposition and kill disease-causing organisms.

9. Spray or dust appropriate crops with fungicides to control specific diseases. If you must use fungicides, be sure to read and follow label instructions.



(Continued from Page B16)

**Champion Market Lamb-** Heather Ford.

**Reserve Champion Market Lamb-** William Ford.

**Breeding Ewes**

**Baby Dolls-** 1. Kristine Henn.

**Mix Breed-** 1. Amber Buttner

**Champion Breeding Ewe-** Amber Buttner.

**Reserve Champion Breeding Ewe-** Kristine Henn

**Showmanship-** 1. Nicole Kondziela, 2. Sarah Geiger, 3. Joel Geiger

**Fitting-** 1. Joel Geiger, 2. Sarah Geiger, 3. Nicole Kondziela

**Market Swine**

**Light Weight-** 1. Nicole Kondziela, 2. Joel Geiger

**Medium Weight-** 1. Sarah Geiger, 2. Joel Geiger.

**Heavy Weight-** 1. Sarah Geiger, 2. Nicole Kondziela

**Heavy Heavy Weight-** 1. Tiffany Strunk, 2. Tiffany Strunk

**Pair Class-** 1. Sarah Geiger, 2. Nicole Kondziela, 3. Tiffany Strunk

**Champion Market Swine-** 1. Sarah Geiger.

**Reserve Champion Market Hog-** Sarah Geiger

**Goat**

**Showmanship Seniors-** 1. Rebecca Lobus, 2. Brant Kloiber, 3. Kateryna Lobus

**Intermediate-** 1. Diana Holder, 2. James Ford

**Juniors-** 1. Stephanie Neff, 2. Amber Buttner, 3. Angel Beltz

**Fitting Seniors-** 1. Rebecca Lobus, 2. Kateryna Lobus, 3. Halyna Lobus

**Intermediate-** 1. Diana Holder, 2. James Ford.

**Juniors-** 1. Stephanie Neff, 2. Amber Buttner, 3. Angel Beltz

**Senior Doe Show**

**Alpine**

**3 years and under 5 years in milk-** 1. Brant Kloiber

**LaMancha**

**Under 3 years in milk-** 1. Heather Ford

**Nubian**

**Under 3 years in milk-** 1. Heather Ford

**Senior Champion-** Brant Kloiber.

**Best Udder in Show-** Brant Kloiber

**Junior Doe Show**

**Alpine**

**0 to under 5 months-** Brant Kloiber

**LaMancha**

**0 to under 5 months-** Kristine Henn

**10 to under 24 months-** Amber Buttner.

**Nubian**

**0 to under 5 months-** 1. Halyna Lobus, 2. Stephanie Neff, 3. Diana Holder

**5 to under 10 months-** 1. Stephanie Neff

**Pygmy**

**10 to under 24 months-** 1. Amber Buttner, 2. Kristine Henn.

**Champion Junior Doe in Show-** Halyna Lobus.

**Grand Champion Doe in Show-** Brant Kloiber.

**Market Show-** 1. Heather Ford, 2. Brant Kloiber, 3. Heather Ford.

**Grand Champion Market Goat-** Heather Ford.

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