

## Two-Spotted Spider Mites



Leaves of plants infested with two-spotted spider mites have distinct pale-yellowish blotches.



The under surfaces of infested leaves have silken threads. Pictured are adult mites on webs.

**Don Janssen**  
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### Injury

Tiny mites suck plant juices from the leaves of many vegetable crops, causing a discoloration of leaves due to the loss of chlorophyll. Leaves of infested plants have distinct pale-yellowish blotches. As the mite population increases, the entire leaf turns brown, dries and drops from the plant. The under surfaces of infested leaves have silken threads spun across them, often forming large webs over the plant. Plants lose vigor, leaves drop off and the plants die eventually.

### Description

Adult mites have eight legs, are very small (1/60 of an inch in length), are oval and range in color from the clear to light yellow to brownish orange. Two

dark spots can be seen on the back of the adult. The eggs are spherical, a shiny pale yellow, attached to the underside of the leaves and can be seen with a hand lens. Newly hatched larvae are very small and can have only six legs. These develop into the nymph stages, which have eight legs and become adults shortly thereafter. The entire life cycle from egg hatch to adult depends on the temperature and can range from 40 days at 55 degrees F to 5 days at 75 degrees F.

### Habits

Two-spotted mites overwinter as adults in soil, on tree bark and in similar sheltered places. They become active in early-spring but usually reach peak abundance in mid- to late-July during hot, dry weather. Mites attack nearly all vegetable plants and are readily seen on beans, cucurbits, eggplant, tomato and potato.

### Nonchemical Control

1. Mow weeds around the garden border to reduce the mite population.
2. Wash mites off the plants with a soap and water solution applied under sufficient pressure to break the webs. Or, wash the plants with water, using a garden hose

### Chemical Control

1. Excessive use of the insecticides carbaryl (Sevin) kill beneficial mite predators, allowing mite populations to increase rapidly. Insecticidal soap and either pyrethrin or kelthane may be used in your spray tank to reduce a mite population buildup.
2. Thorough coverage of leaves, especially the undersides, is necessary to obtain good control.
3. Read and follow all label directions. Observe the proper days' wait before harvest for each particular crop.

## Water Conservation at Home Begins in the Bathroom, Laundry Room

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To conserve water in the home, start with the largest water users. The toilet, shower, bath and washing machine account for two-thirds of the water used in an average household.

About 20 percent of toilets leak. Put a few drops of food dye in the tank. After 15 minutes if color appears in the bowl, there is a leak that should be repaired. Typically, the toilet flapper needs replaced.

A toilet installed prior to 1993 may use up to seven gallons of water per flush. Newer toilets use 1.6 gallons per flush. Pressure and vacuum assisted and jet action toilets were designed to improve waste removal.

Toilet dams, 1.6 gallon flappers or water-filled plastic containers can be installed in older toilet tanks, but reduced flow can affect flushing. About three gallons of water in the tank may be needed to flush properly. Avoid bricks that crumble and affect operation.

Older showers can use as much as six to eight gallons of water per minute fully opened. As of 1994, shower heads use no more than 2.5 GPM. A quick shower usually draws less water than a bath. If using a bath, use lower bathtub levels.

Adjust water level of the washing machine to the laundry load size and soil. Typically, less water will be used to wash fewer full loads than several small loads.

Look for the EnergyStar label and amount of water used for washing machine tub capacity. Some washers sense the load size, soil of water, fabric and adjust the water level. High pressure rinses to spray clothes during the rinse cycle reduce water consumption. Adjustable water level settings allow the ability to choose the level for the load.



## Harvesting Rainwater Helps Conserve Water and Save Money

### What Are They?

A rain barrel is any above ground container modified to receive, store and distribute rooftop runoff for non-drinking uses. The typical size of a rain barrel is 55 gallons. The main components of a rain barrel are a connection to the downspout, a filter to prevent mosquitoes from entering, a faucet to allow for regulated usage and an overflow pipe to divert the excess water.

### What Are the Benefits of Rain Barrels?

- Rain water is naturally soft, oxygenated and more acidic than tap water.
- Rain water is free of chlorine, fluoride, salts and other minerals from tap water.
- Saves water for dry spells.
- Reduces runoff and storm-water pollution.
- Can reduce your water bill, especially in the summer.

### How Can the Water Collected be Used?

The rainwater collected can be used to water lawns and gardens or wash cars and bicycles. Rainwater collected within the barrel is safe for plants because the typical minerals and pollutants trapped in the rainwater are filtered out by plant roots. Rainwater collected in the rain barrel is not for



drinking; rainwater is more acidic than tap water and may contain particulate matter from air pollution.

### How Much Do They Cost?

Rain barrels cost anywhere from \$20 to \$300. The fancier the rain barrel, the more the cost. Costs can be reduced if the barrel is installed by the homeowner. In the summer, lawn and garden watering account for 40% of average household

water usage. By adding a rain barrel, the need for municipal water is reduced. According to the US Environmental Protection Agency, a rain barrel can potentially save most homeowners about 1,300 gallons of water during the peak summer months.

### Are There Different Colors, Designs, and Types of Rain Barrels?

Rain barrels come in essentially any design or style. However, most regular rain barrels are usually black or blue plastic. Since only a 1/2 inch rainfall on a 160 square foot roof will fill a 55 gallon rain barrel, some people choose to get a tandem barrel (2 barrels at 1 downspout) or another barrel at a different downspout.

### What Type of Maintenance is Required?

The barrel will require periodic cleaning. A safe cleaning solution is 2 teaspoons of castile soap and 2 teaspoons of vinegar per gallon of water or 2 teaspoons of lemon juice per gallon of water. In the winter, the barrel will need to be emptied and disconnected from the downspout.

Source: City of Lincoln Watershed Management: Education Web site

### FOR MORE INFORMATION

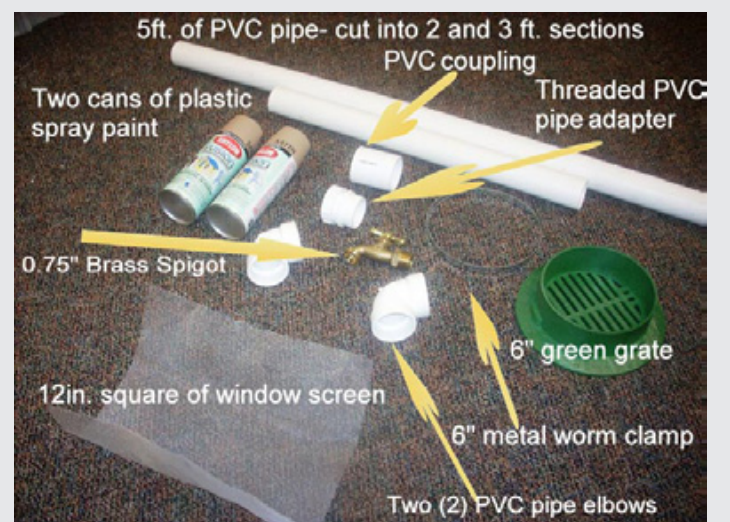
The City of Lincoln Watershed Management Web site has information about:

- Where to Buy a Rain Barrel
- How to Make Your Own Rain Barrel
- Artistic Rain Barrel Program
- Rain Barrel Classes

Go to <http://lincoln.ne.gov> and type keyword "rain barrel"



Next time you visit City Hall, view the rain barrel display.



Shown above are the parts needed to build a rain barrel. The City of Lincoln Web site has step-by-step instructions.

If you are interested in purchasing a used, food-grade plastic barrel, contact Keep Nebraska Beautiful - Materials Exchange Program at 486-4622.