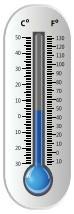
Remember to spray when the temperature is above freezing and will stay above freezing long enough for the chemicals to dry completely.



Rockin E Gardening Handouts

Tips and Suggestions for 'Year-Round' Gardening

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Dormant Spray Guide

'Dormant Spray' is one of the best, and most important, sprays of the entire year. Dormant spray means spraying a plant with 'Dormant Oil', (or some other pesticide) when it does not have any active growth. This spray can be applied in the late-fall, winter, or early-spring; sometimes it is needed both in the fall and in the spring.

A properly timed dormant spray will prevent, and kill more insects and diseases, than most other sprays during the year. Dormant sprays can also help reduce the amount of spraying needed later in the season.

If you only spray your plants once during the year, be sure to 'dormant spray' them. Even if you do not like to use chemicals in your yard, you can still dormant spray your plants. Just use dormant oil by itself. Oil is one of the safest insecticides you can use. It is not usually poisonous to animals, birds, or humans; but it is deadly to insects. Insects can not build up resistance to it. You don't have to worry: "This time they will die, the next time they won't" is not true about Dormant Oil.

Dormant Spray Definitions

The term 'Dormant Spray' is used interchangeably as both a noun and a verb, which is sometimes a little confusing.

Dormant Spray (verb) is spraying a plant when it does not have any active growth.

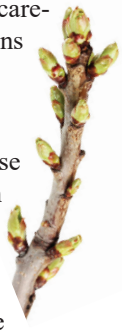
Dormant Spray (noun) is usually a horticultural plant oil (not a motor oil). It is either used by itself, or it can be mixed with either an insecticide or a fungicide; not both.

Older types of dormant oil are considered 'heavy' petroleum oil. They can be harmful to plants with leaves, so they should only be used on truly dormant plants. Summer oils, also referred to as 'horticultural' or 'supreme' oils, are lighter petroleum oils that contain fewer impurities and can be used throughout the year; until the temperature gets too hot.

How safe is dormant oil for people? Most dormant oils are not *'organic',* but they are *'enviro-friendly'*. Compared to most pesticides, dormant oil is very safe. This does not mean it is safe to ingest or play around with, but it is much less toxic than many sprays that you apply during the growing season. When applying, you should use the same precautions as with any other chemical.

Common dormant oils are **Hi Yield Dormant Spray, Fertilome Horticultural Oil Spray,** and **Bonide All Season Spray Oil.** In the past, many gardeners have also mixed **Malathion, Lime Sulfur,** or **Copper Fungicide** with dormant oil for specific purposes.

However, before mixing any chemicals, you should check to see if they are compatible, and make sure you mix them carefully. Please ask about the latest chemical recommendations because chemical recommendations do change.



Dormant Insect Spray

Dormant oil acts as a physical insect control because it smothers insects at all stages of their life. In addition to smothering insects, dormant oil penetrates the waxy coating of the insect's eggs interfering with their ability to hatch. Dormant oil only kills insects that are present at the time of application. Insects which migrate to the treated plant later in the spring and summer will not be affected by dormant oil residues.

Dormant oil also acts as a sticker, keeping insecticides, or fungicides, on the plant for longer periods of time. Dormant oil is very effective for controlling all insects that it comes in contact with.

When to Apply Dormant Spray

Dormant spray should be applied when the plant is dormant. A plant is dormant when it is not actively growing. When deciduous trees lose their leaves, they are dormant. Junipers, laurel, holly, and other evergreens, do not lose their leaves, but they are still dormant during the winter.

Dormant sprays are very concentrated and should be applied before the plant produces new leaves. If a dormant spray is applied to a new, tender leaf or blossom, it may *'burn'* it.

Dormant spraying should be done on a day when there is little, or no, breeze. The ideal temperature for application is between 40° and 70° F., preferably temperatures should remain over 40° F. for at least twenty four hours in order to get the oil to spread out over the tree and cover all the crevices. Complete coverage is required for effective control of all overwintering pests.

Spraying Tip: Wait to apply dormant spray until after you are finished pruning.

The very best time to apply dormant spray is when the buds are swelling on the plant; just about ready to break open. Insect's eggs, just like plants, are dormant during the winter. Insect eggs, in their dormant stage, are very resistant to both the cold and to chemicals. The closer the eggs are to hatching, the easier they are to kill. Many insect eggs may also be under some of the plant tissues surrounding the buds. When the buds begin to swell, the tissues expand and allow the oil to penetrate further into the plant.

The term **"Delayed Dormant Spray"** means to wait until the buds have already started to open before spraying. Apple trees, for example, should have a little white showing in their buds before you dormant spray them. The later you wait to spray your trees, the better the results will be. Waiting to spray has its advantage, but don't wait too long. Do not spray blooming trees; the dormant spray will burn and kill the flowers. Dormant spray may also kill beneficial insects if you spray during the blooming time.

Dormant Disease Spray

Besides preventing insects with a dormant spray, you can also prevent certain diseases with a dormant disease spray. Fortunately, we do not have as many diseases in Utah as in other areas of the

country. Coryneum Blight (Shot Hole Fungus) is a common disease of peaches, apricots and other stone fruits. Aspen Leaf Spot is another disease that is best controlled during the dormant season. Roses and Jonathan apple trees (infected by powdery mildew) can also benefit from a dormant disease spray. Other plants may also have diseases that require a dormant disease spray such as rust, blackspot, fireblight, and peach leaf curl. If you have a specific problem with some of the plants in your yard, please stop by with your questions.

One of the best fungicides for dormant disease controls is **Copper Fungicide**. Copper is a powerful, nonspecific fungicide and bactericide that stands up to the fall, winter, and spring rains. It adheres to plants, making it an excellent choice for a winter fungicide. Unless otherwise noted, mix this fungicide with horticultural oil. Apply copper in the fall when 60% to 80% of the leaves have fallen. Reapply in the spring, just before the buds open.

Which plants need Dormant Spray?

Most trees and shrubs in your yard will benefit from **dormant spray**. Fruit trees, raspberries, junipers, roses, and many flowering shrubs probably benefit the most. The main insects you can control with dormant spray are; aphids, spider mites, blister mites, bud mites, scale, pear psylla, peach twig borers, lygus bugs, and many other insect's eggs.

Spray the upper branches, twigs and trunks of trees with dormant spray. Try not to spray the lower trunks with dormant spray because many beneficial insects lay their eggs in the lower parts of the tree. Spray the branches thoroughly; to the point of dripping. You may need 4 or 5 gallons of dormant spray to completely cover a large tree.

Spray junipers, and other shrubs, thoroughly from top to bottom, to prevent many insects, such as scale or spidermites. Additional insect sprays may be needed during the summer, but ***'dormant spray'*** is a good way to start and will do the most good.

Dormant spray does not kill all insects. Dormant spray, for example, will not control the Cherry fruit flies, Boxelder Bugs, or the Apple Coddling moths. These insects do not lay their eggs on the plants; they lay their eggs in the grass, on the house, or in the soil. Dormant spray only controls those insects (and eggs) on the plants when you spray.

Using and Mixing Chemicals Safely

Using a pesticide, except as registered by the manufacturer, is a violation of the law. The results of misusing a pesticide may damage your plants or kill unwanted targets.

Whenever you use a pesticide, pay special attention to the health and safety recommendations of the manufacturer. You must take special precautions to assure the safety of people who may come in contact with the spray, and to prevent contamination. Wear the proper clothing, choose a sprayer that is appropriate for your situation, and use the proper pesticide.

Mixing ***Dormant Spray*** chemicals can be very simple, depending upon the type of sprayer you are using and the chemicals you are mixing together.

The first rule of using & mixing chemicals is:

Always Read The Label of All the Chemicals You Are Going to Use. Check the label to find out if the chemicals are the correct products, and are compatible before trying to mix them. If you are not sure they are compatible then **don't mix them together**!

The second rule of using & mixing chemicals is:

Always Read The Label of All the Chemicals You Are Going to Use. Check the label to find out how much of each chemical you should use. If a label says to use 1 tablespoon per gallon of water, then use 1 tablespoon per gallon of water.

(Do not use 2 or 3 tablespoons per gallon of water).

When spraying any garden pesticide, wear appropriate protective clothing – long pants, long sleeves, a hat, chemical-resistant gloves (not just your kitchen rubber gloves), and anti-splash goggles. Wash hands and face after use, and launder your clothes.

The easiest way to mix chemicals is to use a tank sprayer. Fill the tank sprayer with half of the water needed. Add the chemicals to the water and then fill the tank with the rest of water needed. Sound Simple? If you are using a wettable powder, dissolve the powder in a little water, making a paste, before putting the chemical into the tank sprayer. Otherwise the powder tends to become a clump and will not dissolve properly.

A hose end sprayer may seem a little harder to use, but it is not. If your sprayer mixes a certain amount of spray, (the **'Fertilome 6 gallon Sprayer'** makes up to six gallons of spray each time you fill it) put the amount of all chemicals needed to make 6 gallons of spray into the jar. Then fill the jar with water to the 6 gallon mark.

Example: If you are to use 2 teaspoons of Malathion per gallon of water and 6 tablespoons of Dormant Oil per gallon of water; put 12 teaspoons of Malathion and 36 tablespoons of Dormant Oil in the sprayer jar. Fill the rest of the sprayer jar with water (to the 6 gallon line on the jar). The sprayer will do the rest for you. There is no other mixing needed.

If your hose end sprayer has a dial on it, such as the **Bonide No Mix Sprayer,** or the **Fertilome No Mix Sprayer**, you just need to get the ratio of chemicals correct in the jar (you do not add any water in the jar with this type of sprayer). **Example:** If you need to mix 2 teaspoons of Malathion per gallon of water and 6 tablespoons of oil per gallon of water, then put that ratio of Malathion and oil in the sprayer jar.

For every 2 teaspoons of Malathion you put in the sprayer bottle, put 6 tablespoons of oil in the jar also. Fill the sprayer jar as full of this mixture as you need to make the amount of spray desired. **Do not add any water to the sprayer jar.** Set the dial on 20 teaspoons per gallon (two teaspoons of Malathion plus 18 teaspoons of oil). You must convert all measurements to the same unit and then you must convert this amount to the closest setting on your sprayer.

Remember: 6 Tbs + 2 tsp = 6 2/3 Tbs = 20 tsp = 3 1/3 ounce

Once you have filled the jar with the correct ratio of chemicals and converted the ratio into a sprayer setting, the sprayer will mix the correct amount of spray with the right amount of water. Hose end sprayers sound complicated to use, but once you've used one a couple of times, you will discover that they are very fast and easy to use.

Measurement Conversions

3 teaspoons = 1 tablespoon

2 tablespoons = 1 ounce ***1 pint = 16 ounces***

8 ounces = 1 cup ***1 quart = 32 ounces***

2 cups = 1 pint ***1 gallon = 128 ounces***

1 ounce = 6 teaspoons

How Much Spray?

Height	Width	Gal / Tree
4'	3'	0.5
5 to 8'	3 to 6'	1 to 1.5
8 to 10'	4 to 8'	2 to 3
10 to 15'	8 to 15'	3 to 6
15 to 20'	15 to 25'	5 to 10

* Use the greater amounts for trees with full foliage

Other Resources

http://ucce.ucdavis.edu/files/datastore/268-329.pdf

https://utahpests.usu.edu/IPM/htm/advisories/treefruit/articleID=12303

http://extension.usu.edu/files/publications/factsheet/fire-blight-08.pdf

http://www.bonide.com/lbonide/backlabels/l210.pdf

http://www.bonide.com/products/product.php?category_id=210

http://extension.oregonstate.edu/gardening/dormant-sprays-can-help-reduce-pests-disease-home-orchards

http://www.montereylawngarden.com/gardentips/dormant_sprays.html

http://www.ext.colostate.edu/pubs/garden/02804.html