

# Whiteflies

**T**he tell tale signs that you see at first when whiteflies hit are wilt. At first you think that the drought has really affected your plants. Thoughts run through your head and you assume that you have skipped one too many days watering. But then upon further inspection you hit the plants and see little white guys fly around the plant or there is a white honeydew or secretion left on the plants. This honeydew will then turn black with a sooty mold fungus. This blocks the photosynthesis of the plants. Whiteflies are sucking insects and suck the juices out of your plants.

**First Line of Defense** Healthy plants are the first line of defense. Many times the plants are stressed and are either drought stricken or over watered. One more thing to consider is that many times plants are deficient in phosphorus and magnesium. So make sure that the plants are well fed and happy campers!

## **Keep Your Yard and Garden Free of Weeds and Debris Year Round**

Insects will migrate to surrounding areas and breed there. You want to pay close attention to get rid of the weeds in your garden and in the areas near by. You do not want your garden to become re-infested with the pests that you just got rid of because the weeds in the surrounding areas were harboring the pests. When you are done with your crops in the fall plant a cover crop and that way your garden is covered. It is not just a bare mess waiting for an accident. But watch your cover crops in the spring. Just because you plant a cover crop does not mean that unwanted guests will not enter it. If you get a bunch of unwanted guests that will ruin your garden in the spring the solution is easy. Chop them up, by



## **A Whitefly Sucking the Life Out of Collards**

mowing the cover crop, and turn them under. Mowing it before you turn it under will chop the unwanted guests to shreds. You will still have the organic matter to incorporate, and the eggs will be buried underground so they will not be able to turn into bothersome critters. Just make sure that you leave it decompose for at least two or three weeks to make sure that all eggs hatch out and decompose under ground, and the plant material gets well incorporated into the ground before you plant a crop.

**Good Air Circulation** Make sure that there is plenty of room for your plants to get proper air circulation. right now that is very difficult as everyone's garden is a jungle. It helps when you have an infestation on your cole crops to pick off the old leaves on the kale and collards and compost them. The leaves will grow back and it

gives you a chance to get the whiteflies under control.

**Planting For Beneficials is Your Best Defense** as there are many beneficial insects that will consume these pesky critters. Lady bugs, lacewings, praying mantids and minute pirate bugs all help to control whiteflies. The parasitic wasp encarsia formosa is the most widely used control for whiteflies on greenhouses. Plant mint, fennel, dill, yarrow, clover and dandelions for lacewings. Ladybugs like cilantro as well as carrot flowers. Herb flowers are always a treat for beneficials. You must remember to plant flowers that are small flat and open for the beneficial insects. They need a source of carbohydrates to eat and they also need water to drink, and shelter to get out of the elements.

**Yellow Sticky Traps** capture these little guys while they are hovering about

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All you have to do is mount the trap over the top of the top the crop that is being attacked. You can make your own by taking a piece of florescent yellow cardboard or plastic and coat it with petroleum jelly or tanglefoot. Then hang it on a wire or bamboo stick and insert it in the ground so it is about 6-12 inches above the effected crop.

**Biorationals** remember even though these controls are natural they all have an effect on bees and beneficials so be careful and apply them early in the morning so they will not kill the honey bees.

**Azadirachtin** The two active ingredients are made from the oil found in neem tree seeds. This product disrupts the insect molting period antagonizing the insect hormone ecdysone.

**Diatomaceous Earth (Silicon Dioxide)** is made from a fossilized hard shell algae. It is ground into a fine powder and it absorbs lipids from the cuticle, the waxy outer layer of insects exoskeletons. This causes the insects to dehydrate and die due to the water pressure deficiency. Be careful not to breathe the dust when using DE, as it is not good to get it in your lungs. It is advised to wear a mask.

**Pyrethrum** comes from the seed cases of the perennial plant pyrethrum (*Chrysanthemum Cinerariaefolium*). Pyrethrum work by attacking the nervous system of insects and are neurotoxins. When used in amounts not fatal to insects, they still may have an insect repellent effect. Pyrethrins are very harmful to fish but are far less toxic to mammals and birds. They are biodegradable and break down easily

when exposed to light or oxygen. They are the safest insecticides for use around food.

**Garlic Extract** is used as a deterrent for whiteflies as well as many other insects. It has a lasting effect and needs reapplied after it rains. You also get a bonus when using garlic as it works on powdery mildew.

## From US Patent Office

2# garlic  
2# water (32 oz.)

Treats 2,500 square feet

**Rosemary Oil** is used both inside and out for a variety of insects. Oils work by smothering the insects so that they cannot breathe. The added aromatic oils work as a deterrent.

**Joboa Oil** is made from the joboa seed and is used as a deterrent for insects and to smother and kill other insects. Joboa oil also kills powdery mildew on plants.

**Soybean Oil** is frequently combined with other oils such as citrus and rosemary oil. Oils work by smothering the insects so that they cannot breathe. The added aromatic oils work as a deterrent.

**Beauveria bassiana** belongs to the entomopathogenic fungi. It is a fungus that grows around the world and acts a parasite by causing disease in insects. It is used for control in whiteflies, termites beetles and is being tested for use in the control of malaria-transmitting mosquitoes.

**Orange Oil** Oils work by smothering the insects so that they cannot breathe. The added aromatic oils work as a deterrent. Be careful when using

orange oil that you don't mix it too strong or you will burn the plant.

**Insecticidal Soap** This causes the insects to dehydrate and die due to the water pressure deficiency. You can use the commercially available formulas or make your own. When making your own, I suggest adding some garlic and hot pepper as repellents. You might as well make it count when you are spraying!

## Homemade Insecticidal Soap

1-2 Tbl Liquid Soap (Not Detergent)  
1 Quart Water

Here is a recipe for hot pepper spray

## Bug Juice Spray

2 bulbs garlic  
2 cayenne/habanero peppers

Liquify first two ingredients in a blender 1/3 full of water. Strain and add enough water to make 1 gallon. Add 1/4 cup of this mixed concentrate per gallon per water. Add 2 Tbl H<sub>2</sub>O if you want it stronger

This spray should work well on whiteflies

## Aphid Spray

1 Cup vegetable Oil  
or White Mineral Oil  
1-1/2 Cups Water  
2 tsp Dish Soap or Murphy's Oil Soap  
Spray every few days