

Spider Mites

On a mid summer day, you will find tomatoes brown at the bottom in central Texas. This is the mark of Spider mites. If you get close you will find the leaves shiny and you may even find tiny webs if there is a large infestation. Spider mites hit in the summer when it is dry outside because the plants are usually stressed when they are under watered. If you have spider mites look for soil that is too wet or too dry. So keep your plants evenly watered in the summer. If you use mulch it will keep the ground from drying out. And make sure when you water that you don't make it too soggy.

First Line of Defense

Spray the spider mites off with a **hard blast of water** first. This will get the bulk of the insects off of the plant so you have a smaller infestation to penetrate.

The hatch cycle of the spider mites is every three days. So whatever method you use you need to spray every three days for nine days. That is a total of three times.

The preferred method of treatment is to spray the plants with a **foliar feed of kelp or fish emulsion** every three days. This method is said to work as well as any biorational method and does not harm beneficial insects. It feeds the plants trace minerals that are essential and are hard to get elsewhere. The minerals are taken into the plants immediately. This feeding should not substitute regular feeding or the roots will become lazy.

Using this line of defense and **planting for beneficials is your best defense** as there are many beneficial bugs that will target aphids. Lady bugs of course thrive on them but so do lacewings,



Spider Mites Are Very Small Insects

minute pirate bugs, aphid midge, big eyed bug and predatory mite just to name a few. So keep the small flowering plants around such as dill, cilantro, and fennel. And keep some plants that are bush like for them to establish a home in like oregano or dianthus.

Biorationals remember these all have an effect on bees and beneficials

Azadirachtin has two active ingredients made from the neem tree seeds.

Sulfur the natural element that we are all familiar with causes dehydration and electrolyte depletion

Pyrethrins are made from the seed cases the pyrethrum flower, a species of chrysanthemum flower. It is the safest around food.

Spinosad is made of spinosyns A and D, they are substances that are made by aerobic fermentation. The species that

is being fermented is *Saccharopolysora spinosa* of the actinomycete species. They were found in the Caribbean in soil samples in 1982. They are the filamentous bacteria that are in the soil that give it that sweet earthy smell. Spinosad works by ingestion, activating the nervous system of the insect, causing loss of muscle control. The insect dies of exhaustion because of the continuous activation of motor neurons. This usually happens within one to two days.

Soybean Oil uses soybean oil as a base and them lemon orange and anise oils to drive away and smother pests.

D-Limonene is a citrus oil extract used to kill insects.

Garlic Extract uses garlic to repel insects. Some are mixed with hot pepper to even further drive the pests away.