Excerpt (pertaining to Mites) from a longer article by Alan Fisher, originally published in the *Dahliagram* and condensed for the ADS as *Fertilizing, Bug and Disease Control*

Meanwhile, watch for spider mites. By mid-June in our area [Maryland], one should spray regularly for spider mites. Once the hot, humid weather starts, the mites appear as if by magic. Spider mites will spread from infected to healthy plants, and they can kill a healthy plant in a matter of days. (The life cycle of spider mites is three days, and each mite lays approximately 200 eggs.)

A well respected grower recommended to me a few years ago to avoid Talstar and replace it with Conserve, because Talstar attracts spider mites while Conserve does not. (All insecticides in the carbamates and pyrethrum classes make spider mites explode in population.) Azadirachtin is available in low concentration (small users) as Azatrol and as Azatin-O for large users (much higher concentration). To find the best prices, search the internet. Azatrol, a growth regulator, prevents insects and mites from developing from one life stage to the next. Regular use of Azatrol helps considerably fighting both insects and mites. Both Conserve and Azatrol are environmentally friendly and approved for organic growing. Meanwhile, slugs are always around and more difficult to eradicate than to keep out, so keep up with slug bait all season!

The most common spider mites are two-spotted red spider mites, which attack the oldest foliage, moving up from the ground. In addition to any chemical controls, strip off old foliage from the bottom working up to help keep spider mites and insects under control. Effective control of spider mites is critical, because mites can kill a healthy dahlia plant quickly and spread to other plants before evidence of attack appears on any foliage. A minimum step is to strip off old foliage regularly. After topping the dahlias, once replacement laterals grow beyond foliage from a previous lateral, strip off the old leaves and throw them in a plastic trash bag. If there are any signs of red spider mites, strip off all leaves with signs plus the next set of leaves going up and spray thoroughly. Since mites stay and feed from the backs of the leaves, thorough coverage of both sides of the leaves is critical to controlling mites. Horticultural oil, another organically approved product, which smothers all stages of spider mites (and insects), is an effective step to kill existing mites, but it has no residual and must be re-applied after four to seven days. One may apply horticultural oil safely only when temperatures are less than 85 degrees.

When spider mite damage to a plant is extensive, the only effective cure is to remove the plant, put it in a plastic trash bag, seal the bag, and throw it out. A plant badly invested with spider mites will spread the mites to other plants and is beyond salvation in terms of ever producing decent blooms. Stripping old leaves, throwing away badly affected plants, and using horticultural oil are all consistent with organic gardening. Azatrol (growth regulator based on Neem oil) is much more acceptable than other types of chemicals to proponents of organic gardening. Benefit or Merit (synthetic nicotine sold under both names) is not an approved organic chemical, and its use is controversial. Conserve (Spinosad) is a chemical for chewing insects that organic gardeners consider acceptable, and using Spinosad does not attract spider mites.

Cyclamen and broad mites attack the newest rather than the oldest foliage. Avid, which has come down considerably in price and is also available as a generic now, is systemic on new foliage but not old foliage. Because Avid is systemic on new foliage, and mites stay on the backs of the leaves, Avid is highly effective on cyclamen and broad mites but far less effective on two-spotted red spider mites.

I almost never see the spinach foliage that indicate broad mites.

Pylon, which is very expensive and has a shelf life of 36 months once opened, is the most effective miticide for red spider mites. Mixing any miticide with Azatrol makes the miticide far more effective, because Azatrol prevents insects and mites from progressing from one life stage to the next. Because mites have four life stages, the miticide kills most of the mites, and the Azatrol prevents others from progressing to the next life stage.

Any mites that survive a miticide normally produce next generations that are resistant to the chemical the parent survived. The effective life cycle of a miticide tends to be short. To preserve the effectiveness of miticides, the recommendation is to rotate three different chemical classes before repeating any miticide. (Horticultural oils and insect growth regulators such as Azatrol are not miticides in the same sense. Oils smother mites and insects. Growth regulators prevent the mites and insects from progressing from one to the next life stage. Neither kills the mite or insect directly, so neither is it subject to resistance.)

Mites have four life stages – eggs, larvae, intermediate, and adult. Miticides vary in which stages they control. Many experts recommend combining miticides that kill various stages to control all life stages. Azatrol helps by preventing mites from progressing from the stage when hit to the next developmental stage. Horticultural oil smothers mites at all stages, but the oil ruins any blooms it hits, and it has no residual.

By limiting my insecticides to Conserve, Benefit, and Azatrol, and rotating miticides (Avid, Pylon, and Azatrol are my primary weapons), I have had virtually no problems with spider mites in recent years. Note: I have added a few other miticides to use a minimum of three difference chemical classes in rotation. Because I do not have good knowledge of the effectiveness of the other chemical classes, I have not included them in this report.

I now also use Forbid as an additional miticide. It comes with some raves on the Internet, but I do not have independent evidence of its effectiveness. I normally must use a couple of products, switching frequently, to prevent spider mites in our hot, humid, but dry summers.

Alan Fisher

The above article by Alan Fisher is provided for your consideration. It is an excerpt from an article in the the Dahliagram, a publication of the National Capital Dahlia Society. The ADS does not endorse particular products. Some of our growers are strictly organic and would not use some of the products mentioned in this article – though as you will see in the article, Alan is organic conscious.

Dahlia growing is very location dependent. Many states have county extension offices, operated by a state university, that offer gardening information and advice that is suitable to your local area. What works in one area may not work in others. A really good way to learn what works in your area is to join a local society.

Alan grows dahlias in Maryland with a hot, humid summer climate. Please enjoy the article in the spirit that it is offered…just a talk with an experienced, knowledgeable dahlia friend on the east coast.