



They Mite Be Giants:

Stopping the Summer Spider Mite Surge

July 2015

There's a lot to like about summer: vacations, cookouts, Frisbees and all kinds of outdoor activities. Unfortunately, spider mites find a lot to like about summer, too. Abundant foliage combined with hot, dry weather shifts their reproductive capacity into overdrive. As the temperature goes up, the length of the spider mites' life cycle goes down, leading to population explosions.

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Spider mites have flexed their muscles in recent years by demonstrating their ability to fend off most registered miticides through pesticide resistance. Pesticide resistance has become a major issue for the greenhouse industry and it's forcing a change in pest control strategies.

Early detection is a must, enabling control to be implemented before serious crop damage is observed. Early detection also facilitates the use of biological control agents (BCAs) or softer pesticides. Concentrate scouting efforts on those crops known to be particularly vulnerable to spider mites. Some growers have planted a few bush bean plants to act as trap crops—the proverbial canary in the coal mine. Spider mites thrive in lower humidity, so pay special attention to areas in the greenhouse with lots of air movement such as near intake louvers and doors.

Spider mites are small enough that magnification is needed for effective scouting. Tapping plant leaves and stems onto white paper is one way to scout for spider mites. Spider mites feed on lower leaf surfaces, removing chlorophyll from a cluster of cells and causing small tan or bronze spots to appear on upper leaf surfaces. Heavy feeding can cause a bronzing of the entire leaf and may progress to defoliation. Webbing is sometimes seen but, by the time that occurs, it's generally too late to save affected plants.



Two-spotted spider mite damage on ruellia

Crop nutrition plays a role in spider mite development as well. Entomologist Dr. Raymond Cloyd from Kansas State University has mentioned in various publications a link between high nitrogen levels and increased spider mite populations. Most plants will tolerate more nitrogen than they actually need, so work towards only fertilizing as much as is needed for optimum growth.

Several BCAs are effective against spider mites; each one has attributes that may make it the best choice in one situation or another. Some considerations include the crop to be protected, time of year and other pests that need to be controlled at the same time.



Spider mite damage on buddleia

Pesticides already applied to the crop may leave behind harmful residues that can damage predators for weeks or even months. Unless you're experienced in using BCAs, we suggest consulting with GGSPRO to help you start and maintain a bio-control program. GGSPRO believes that biological controls are an important part of the way forward as the industry comes to grips with fewer effective pesticides.

Horticultural oils such as **Suffoil-X®** or **Ultra-Pure Oil™** can be important allies in combating spider mites. While resistance is not currently a problem, some challenges are associated with using the oils. They work by suffocating mites, so thorough coverage is essential for success. Even with the best sprayers that can be a challenge in dense crop canopies.

Plant safety can also be a problem. To minimize this concern, apply horticultural oils when rapid drying will occur. Control is achieved quickly after spraying so prolonged foliage wetting isn't needed for good results.

Microbial insecticides such as **Preferal™** and **Met 52® EC** are also labeled for spider mites, although GGSPRO does not have a lot of experience with these.

Many different miticides are labeled for controlling spider mites in greenhouses, representing several modes of action. While that sounds like good news, resistance is widespread and can vary from one colony of spider mites to the next. Listed below are examples of labeled miticides organized by mode of action. Always read and follow the entire pesticide label. Not all pesticides are labeled for use in every state. Pesticides other than those listed here may also be safe and

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effective. All materials listed except for **Kontos®** are applied as foliar applications.

Contact activity

MOA UN: **Floramite®*** – Anecdotally, this product appears to perform best with spray water pH in the range of 5.5-6.5.

MOA 20B: **Shuttle™** has label cautions regarding use on impatiens and roses.

MOA 21A: **Sanmite®, Akari®***

MOA 25: **Sultan™** – Long residual product that targets all life stages of mites.

NC: Horticultural oils – **Ultra-Pure*** and **Suffoil-X*** Tips for successful applications are listed on the previous page.

10A: **Hexygon®** – Long residual product that works by life cycle interruption.

Translaminar systemics

MOA 13: **Pylon®*** – also available as a total release aerosol, **Pylon® TR***.

MOA 23: **Judo™, Kontos*** (drench only) Judo damages several important crops; a technical bulletin with a list is available upon request. Kontos cannot be used on geraniums, dracaena and a few other crops.

MOA 10B: **Tetrasan™, Beethoven® TR** Mite growth regulator, long residual.

MOA 6: **Avid®**

MOA UN + 6: **Sirocco™** – combination of active ingredients found in Avid and Floramite.

** Indicates at least one edible crop is listed. Check label for details.*

BCAs: Predatory mites

Phytoline p – *Phytoseiulus persimilis*

Anderline aa – *Amblyseius andersoni*

Featured Products

Product	Mode of Action	Size	Item No.
Floramite SC	UN	1 qt.	70-1653
Shuttle O	20B	1 pt.	70-30151
Sanmite 75 WSP	21A	4 - 1 oz.	70-29201
Akari 5SC	21A	1 qt.	70-1160
Sultan	25	16 oz.	70-3045
Ultra-Pure Oil	UN	2.5 gal.	70-21401
SuffOil-X	UN	2.5 gal.	70-4040
Hexygon DF	10A	6 oz.	70-1860
Pylon	13	1 pt.	70-2675
Pylon TR	13	12 - 2 oz.	70-2660
Judo SC	23	8 oz.	70-1235
Kontos SC	23	250 ml	70-1960
TetraSan 5 WDG	10B	1 lb.	70-3130
Beethoven TR	10B	12 - 2 oz.	70-1234
Avid	6	1 qt.	70-1185
Sirocco SC	6/UN	8 oz.	70-3017

Featured BCAs

Trade name	Latin name	Package	Item No.	Comments
Anderline aa	<i>Amblyseius andersoni</i>	20K - 200 mini sachets	SB0016-31	Performs well at temperatures down to 43°F. Can survive on pollen and thrips.
		25K - 100 Gemini sachets	SB0016-01	
		25K - Loose	SB0016-03	
Amblyline cal	<i>Amblyseius californicus</i>	25K - Loose	SB0013-04	Performs at higher temperatures and lower humidity than other predatory mites.
Phytoline p	<i>Phytoseiulus persimilis</i>	2K - Loose	SB1201-02	Consumes all life stages of spider mites. Quick knockdown of mites; no alternate food sources.
		20K - Loose	SB1201-21	