Greenhouse Pest Message, April 21, 2023
Leanne Pundt, UConn Extension

Generally, spring crops are looking good out without too much pest pressure. However, I am seeing or hearing from growers about:

- **Aphid** outbreaks on their favorite host plants and tropicals due to recent spikes in temperatures.
- Occasional **thrips** especially on yellow flowered blooms in warmer greenhouses
- **Shore flies** near their food source, algae
- **Spider Mites** on tropicals such as *Dipladenia*
- **Broad mites**

Broad Mites
Broad mites are very small and are best seen with a 15 - 20x hand lens or dissecting microscope. **Broad mite eggs are covered by small whitish bumps that look like a row of diamonds. (see photo below).**

With magnification, you may be able to see broad mite males carrying females, which might be confused with predation. The males account for much of the dispersal of a broad mite population in their frenzy to carry the female (in-active immature) larvae to youngest leaves.

Broad mite injury can be confused with plant growth regulator overdoses, herbicide spray drift or nutritional imbalances. Look for their eggs on the underside of the leaves with a dissecting microscope.

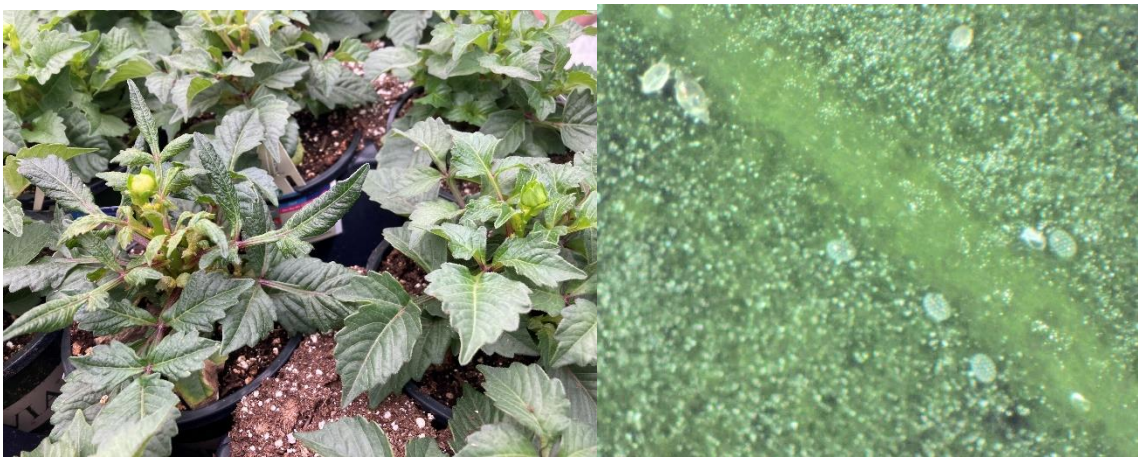


Figure 1 & 2: Broad mite injury on dahlia on left compared to healthy plants surrounding them and closeup of broad mite eggs. Photos by L. Pundt, UConn.

Broad mites can be easily spread to healthy plants by workers and infested

hanging plants may infest plants below.

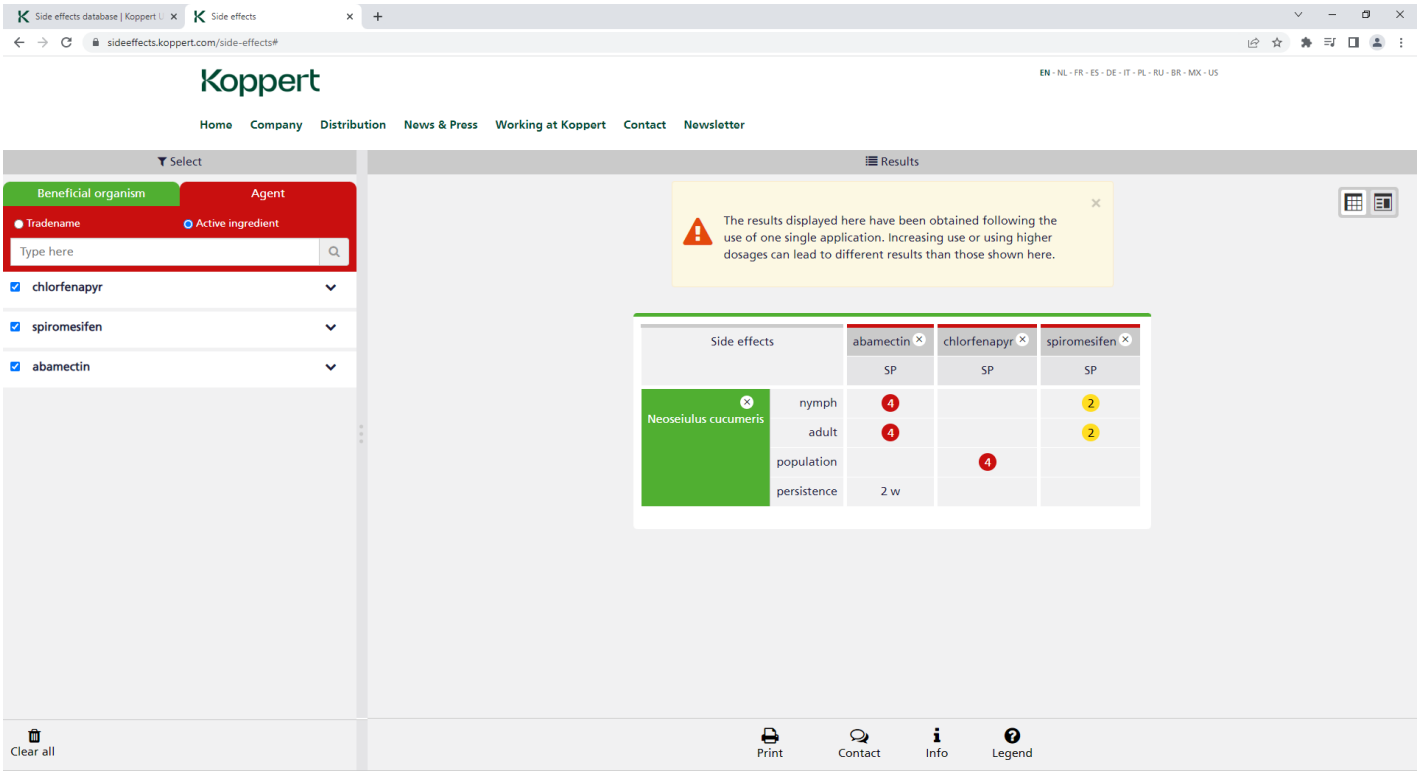
Predatory mites, *Neoseiulus (=Amblyseius) cucumeris, N. californicus and A. swirskii* have been used to suppress broad mites. It is best to apply predatory mites early in the crop production cycle before broad mites become established.

Growers using BCA's may also treat incoming susceptible crops with horticultural oil (SuffOil X) and once dried, begin releases of *cucumeris* on broad mite susceptible crops such as **New Guinea impatiens, garden impatiens, gerbera daisy, dahlia, peppers…**

In the case above, the grower had been releasing predatory mites so there was only a small section of plants affected, that were rogued out and additional releases of predatory mites will be applied to surrounding plants.

As you can see from the [Koppert Side Effects database](),

- Avid is highly toxic when sprayed to *cucumeris* nymphs and adults with a persistence of two weeks.
- Pylon is very harmful with greater than 75% reduction in *cucumeris* populations.
- Savate is moderately harmful with a 25 – 50% reduction.



Not all miticides labeled for spider mites are labeled for broad mites.

Translaminar miticides such as abamectin (Avid), spiromesifen (Savate) and chlorfenapyr (Pylon) tend to be more effective than contact miticides, especially if leaf canopies are dense or coverage on the undersides of leaves is difficult. The Savate (spiromesifen) label recommends not spraying species New Guinea impatiens. Pylon is also labeled for peppers that are prone to broad mites. Be sure to follow label precautions for crop safety.

See the New England Floriculture Guide for additional miticides. Available online at https://greenhouseguide.cahnr.uconn.edu/

Note that the effects of broad mite feeding may persist long after the mites have been eradicated. Repeated applications of beneficials or spray applications may be needed before one sees new growth developing normally.

Downy Mildews
Downy mildews on **Phlox subulata, veronica** and **coleus** have been observed.

Downy mildews tend to result in angular pale areas on upper leaf surfaces and light downy patches on leaf undersides where the fungus is sporulating. The color of the sporulation depends upon the species of downy mildews.

Downy mildews are difficult to control once established. They should not be confused with powdery mildews, for all "mildews" are not the same. In many cases, downy mildew infections are systemic whereas powdery mildew infections are not. Downy mildews must be managed preventively with different classes of fungicides than powdery mildews.

Downy mildews produce sporangia on sporangiophores that are distinct from mycelium in how they branch. Sporangiophores emerge in groups from small openings in the plant leaves (stomata).

Look on underside of leaves, early in the day. Scout routinely, at least once a week. Use a hand lens to look for blooms of sporangia (they may resemble branched trees with lemons.)


Figure 3 & 4: Leaf twisting, leaf drop and gray sporulation from Coleus Downy Mildew on susceptible lime green variety. Photos by L. Pundt


Figure 5 & 6: Downy mildew sporulation on *Phlox subulata*. Photos by Felicia Millett), CAES.

Properly spaced plants will allow for optimal air movement to dry leaves following overhead irrigation and rainfall. Fungicides may help with new infections. Treat highly susceptible plants preventively.

According to Dr. Mary Hausbeck, from Michigan State University the following fungicides may be used against downy mildews: (see attached file, Greenhouse Disease Management 2023)

- "A+" Team. Subdue MAXX (mefenoxam) [4], Adorn (fluopicolide) [43], (Adorn must be tank mixed) Segovis (oxathiapiprolin) [49]
- "A-" Team. Stature SC (dimethomorph) [40], Micora (mandipropamid) [40], Orvego (ametoctradin + dimethomorph) [45/50], Segway (cyazofamid) [21], FenStop (fenamidone) [11]
- "B" Team. Alude (phosphorous acid products)[33], Heritage 50WG (azoxystrobin)[11], Insignia (pyraclostrobin)[11], Pageant Intrinsic

(pyraclostrobin + boscalid)[11/7], Protect DF (mancozeb)[M03], Compass (trifloxystrobin)[11], Disarm G (fluoxastrobin) [11]

From:

Coleus Downy Mildew Update https://www.e-gro.org/pdf/2016_514.pdf
Downy Mildew on Ornamentals https://ipm.cahnr.uconn.edu/wp-content/uploads/sites/3216/2022/12/2019downymildewonornamentalsfinal2.pdf

Save the Date: June 29, 2023

For an all-day in person educational program focusing on diseases and disorders at the CAES in New Haven, CT. *Details coming soon.*

The information is for educational purposes only. All references to commercial products and trade names are for informational purposes only. No endorsement or approval of commercially available products is intended.

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