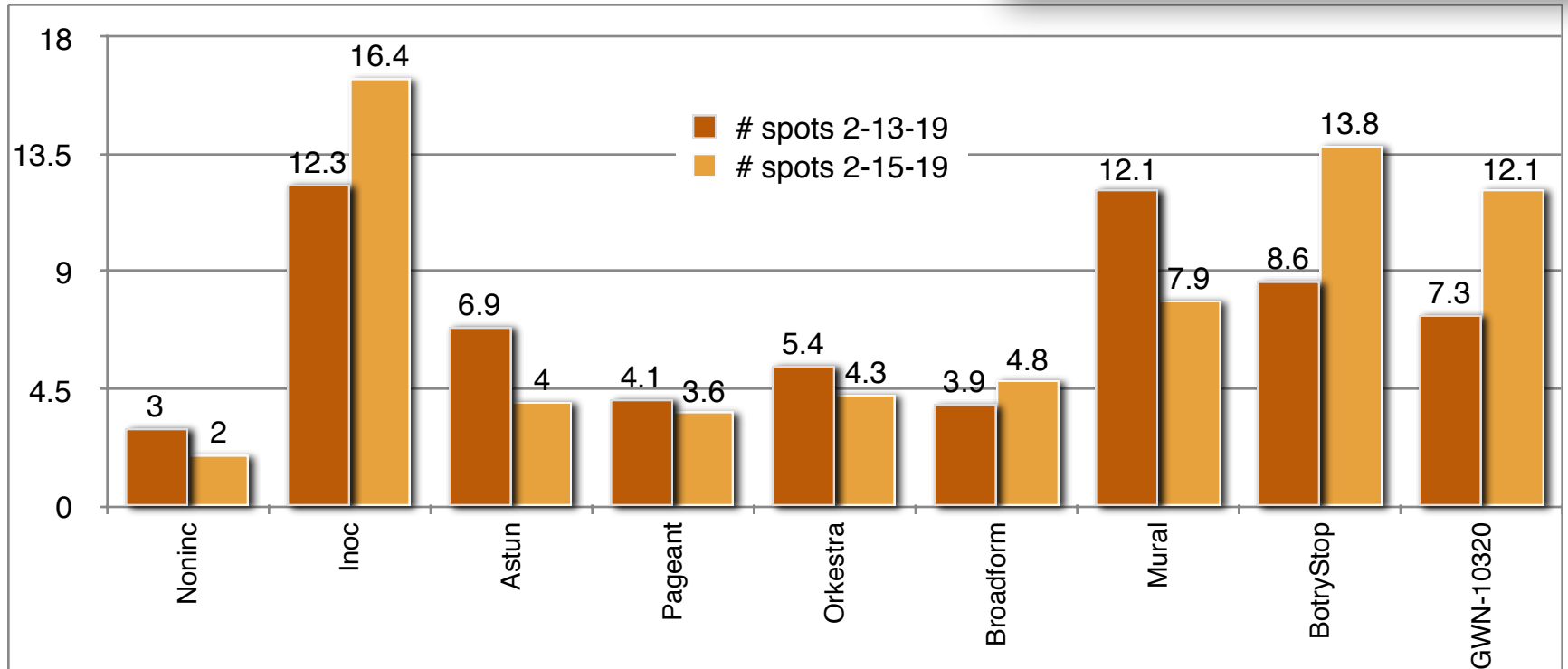


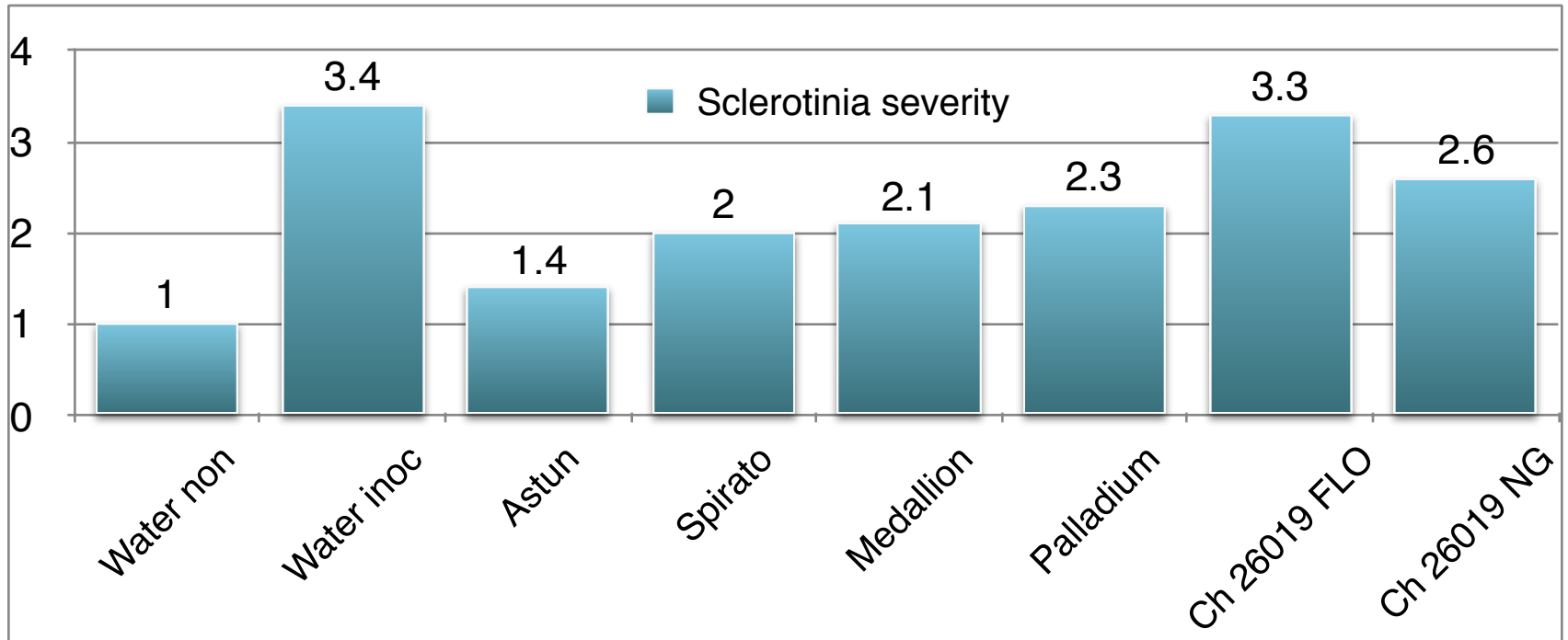
Sclerotinia Petal Blight on Cyclamen

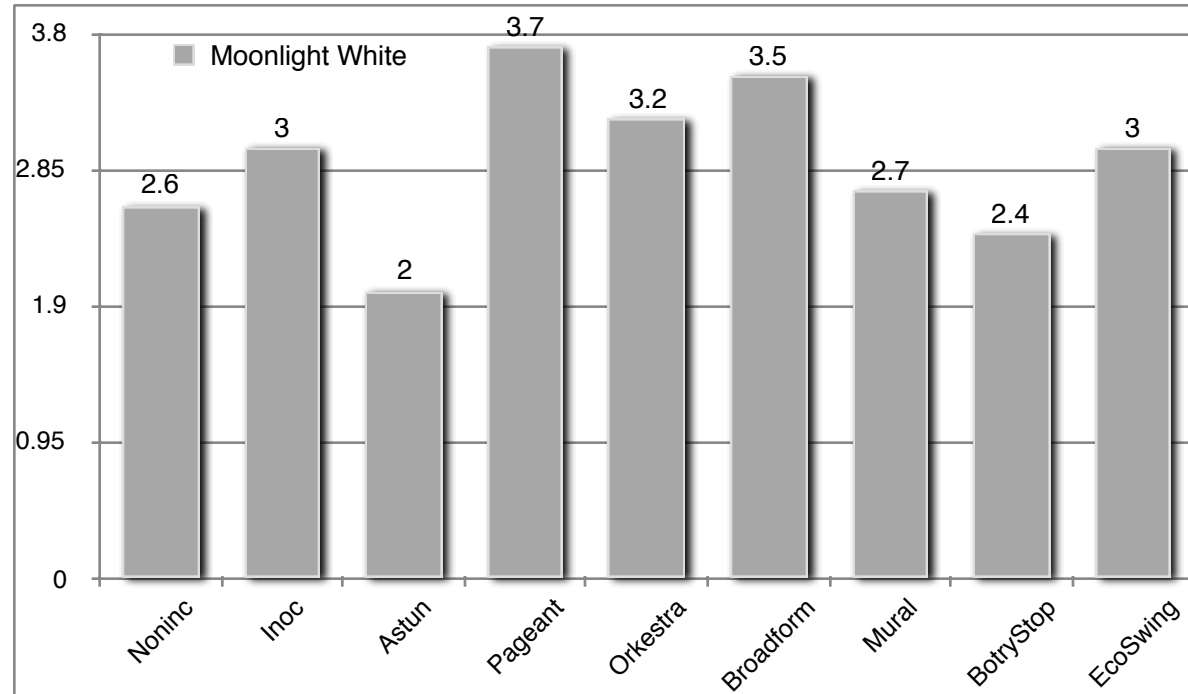
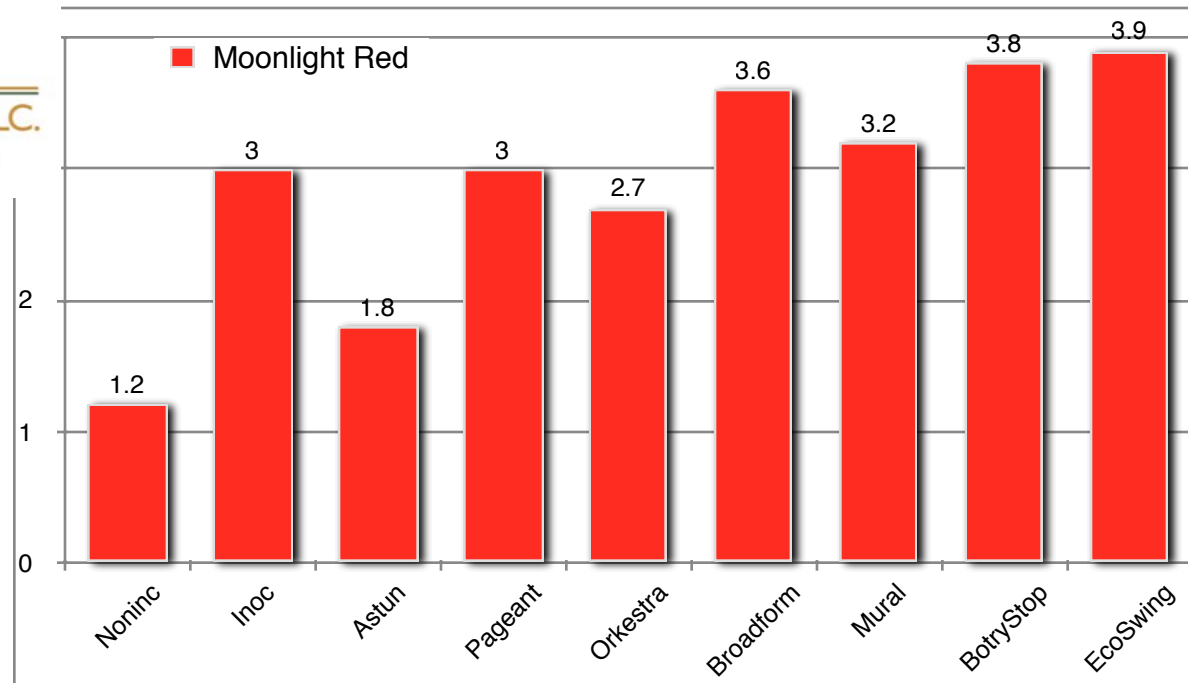


Products were applied twice on a 7-day interval



Treatments	rate/100 gal
Water noninoculated	— —
Water Inoculated	— —
Astun	17 oz
Spriato	4 oz
Medallion	4 oz
Palladium	6 oz
Chipco 26019 FLO	40 oz
Chipco 26019 N/G	16 oz





Botrytis, Sclerotinia Rotation

- **Daconil Ultrex**
- **Decree** (best at killing spores - use 12 oz preventatively and up to 24 oz curatively)
- **Medallion or Palladium**
- **Chipco 26019 N/G, Chipco 26019 FLO**
- **Astun, Broadform or Orkestra Intrinsic**









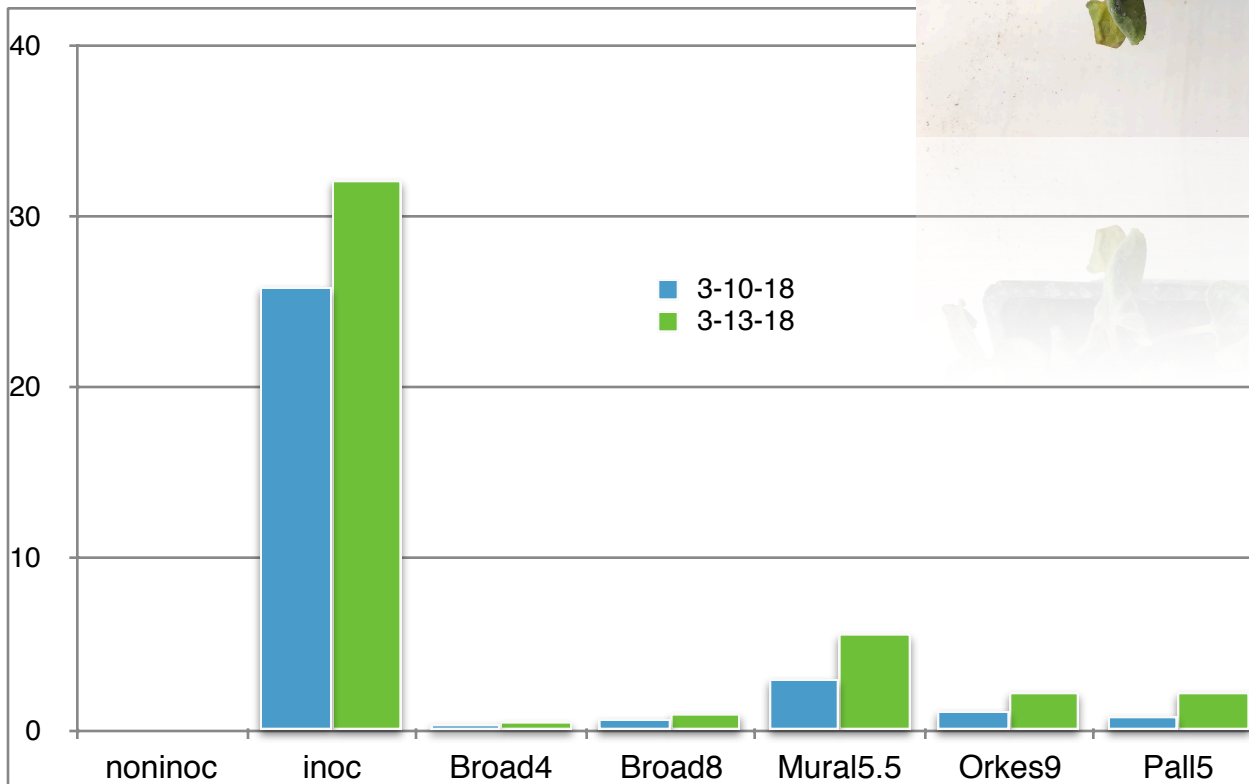
Chase

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Practical Solutions for Growers



Anthracnose on Cyclamen



Products were applied twice on a 14-day interval

Best Fungicides for Prevention of Anthracnose on Cyclamen

	rate/ 100 gal	FRAC	% control	2018 trials
Pageant Intrinsic	18, 8, 8 oz	7, 11	93 (leaf spot), 100 (leaf burn), 32 (8 oz rate)	Orkestra Intrinsic (9 oz/100 gal) E on leaves and flowers
Heritage	2-4 oz	11 7, 11	91-94 *leaves), 97-98 (leaves) VGE (flowers)	Mural VG at 5.5 oz (leaves) G at 5.5 oz (flowers)
Palladium	2-6 oz	9, 12	74-95 (leaf spot), E (flower at 4 oz)	E on leaves and VGE flowers at 5 oz
		7, 11	Close to 100%	Broadform E on leaves at 4 oz



Chase

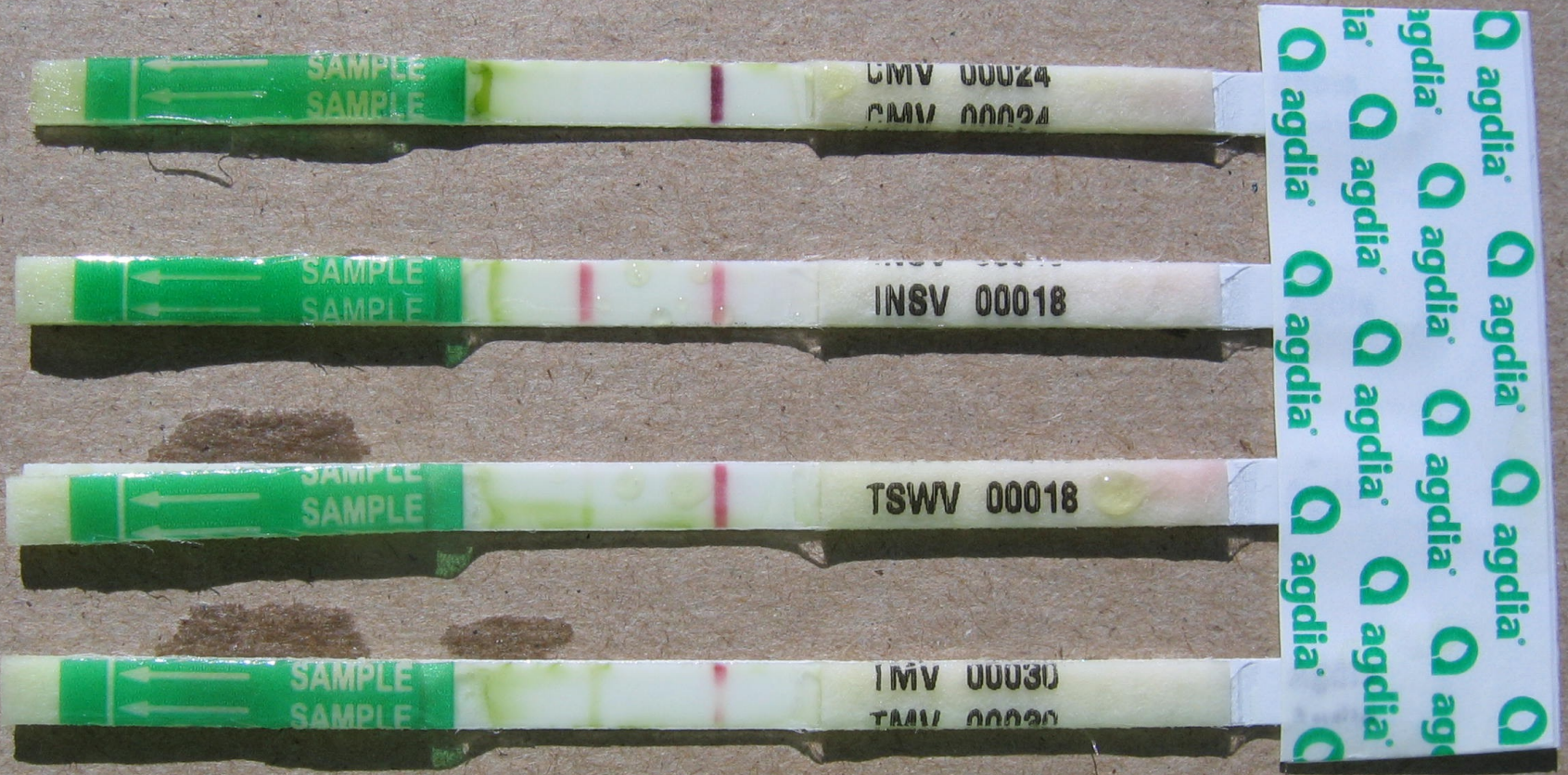
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Tospovirus







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Nonfat Dry Milk

- *NFDM-(20% wt/vol) can be very effective on plants, tools and clothing. Exposure time differs - dipping tools is not effective with short exposures - 10 min needed.
- *The treatment does not have to be wet to work. The effect wears off with overhead irrigation, rainfall or just growth of new leaves.
- *Adding Tween at 0.1% improves the effect.
- *Milk can promote sooty mold growth.
- *Using milk to control virus is not a legal registered use and in some states regulations may be an issue.
- *It is not an inexpensive product in that it costs around \$4/gal or \$400/100 gal. This would be considered very expensive by many growers.

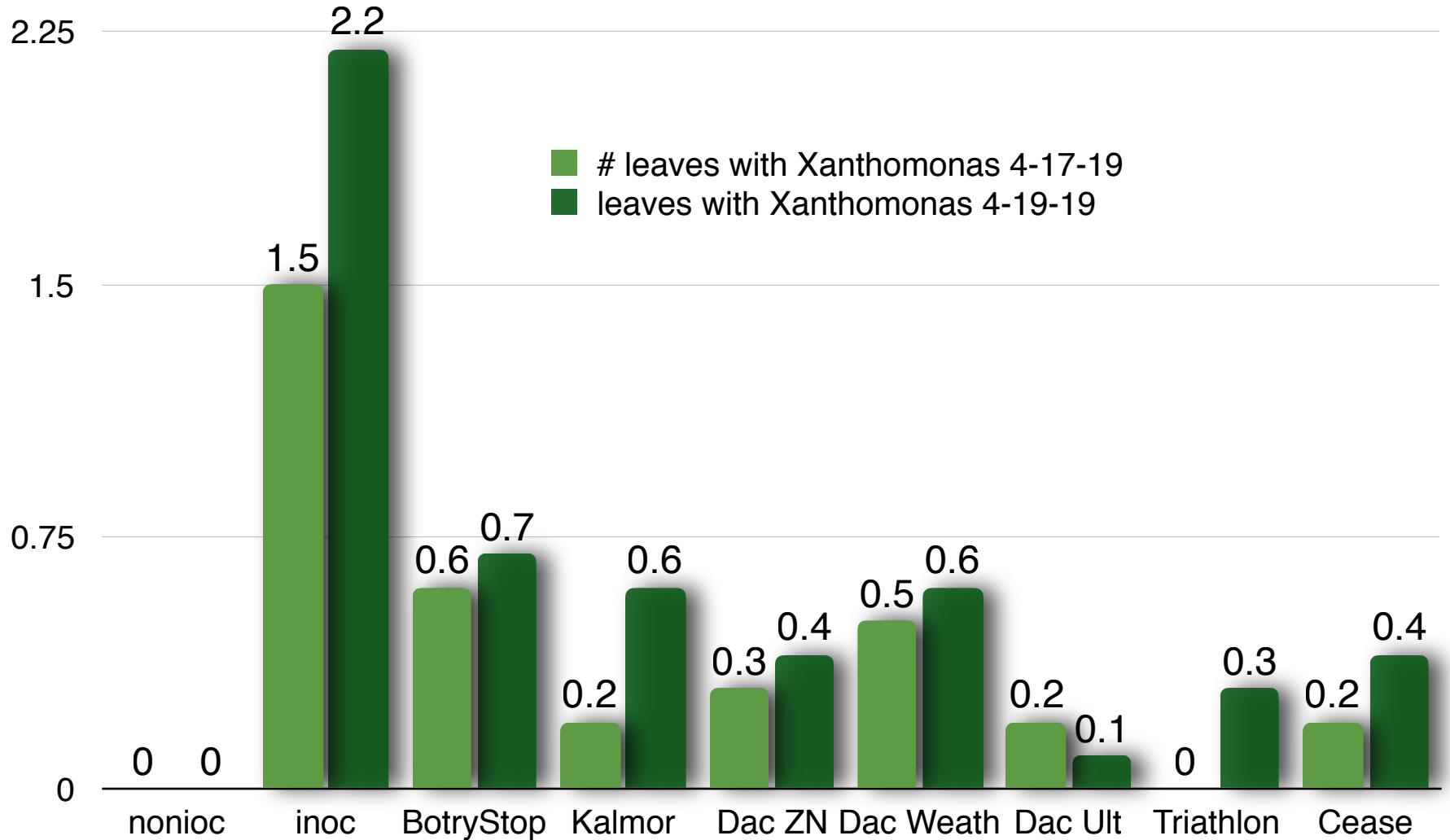






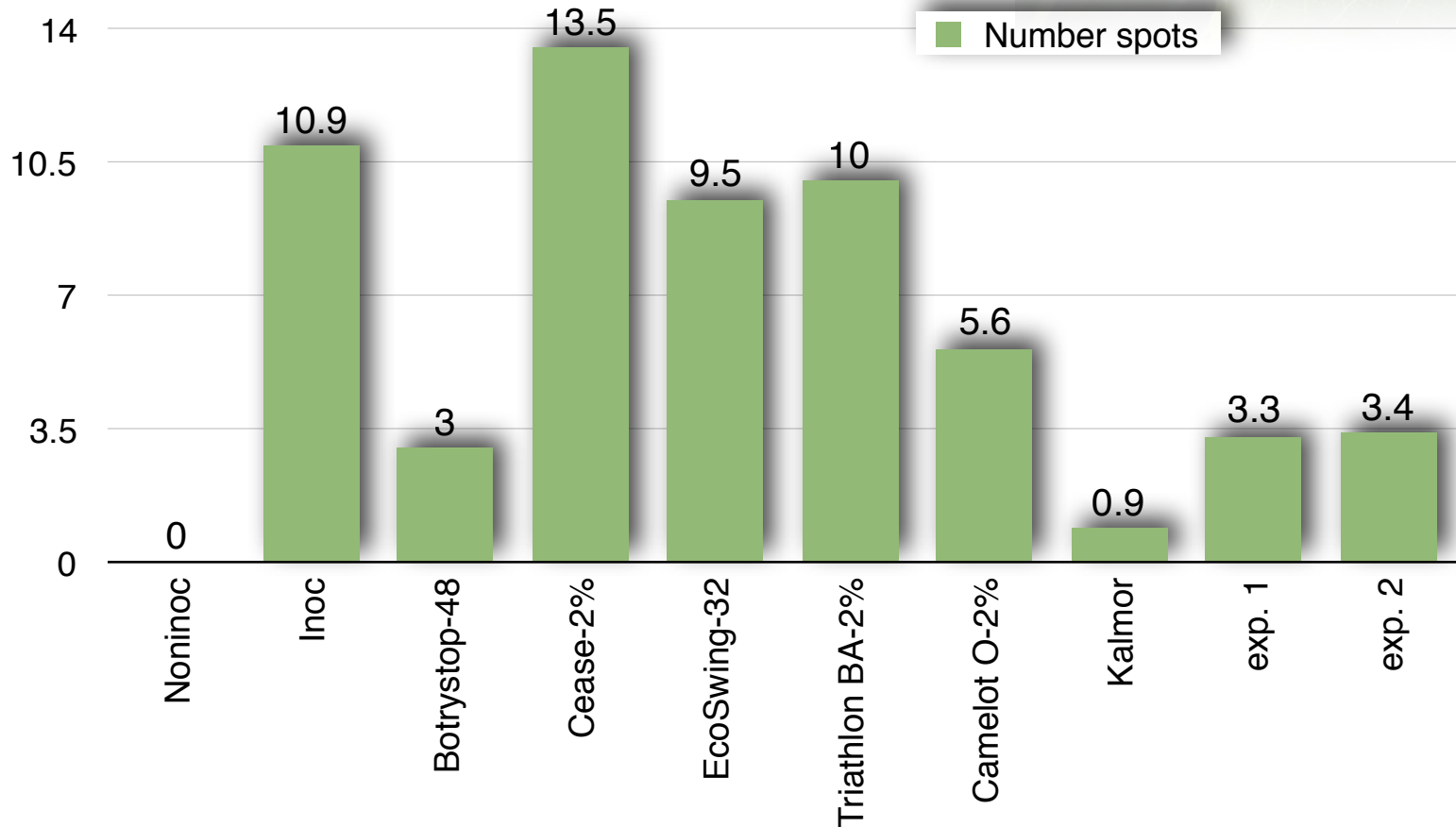
- 1. Get a lab diagnosis for diseases you do not easily recognize. Confusion between fungal and bacterial leaf spots is very easy and common. So are mixed infections with both types of pathogens.**
- 2. Use only healthy cuttings, seedlings or liners.**
- 3. Do not overhead irrigate highly susceptible crops if possible, or irrigate when leaves will dry rapidly.**
- 4. Discard badly infected plants.**
- 5. Space plants to improve air circulation/drying time as well as bactericide coverage.**
- 6. Rotate bactericides between different FRAC groups to limit possibility of bactericide resistance.**

Xanthomonas leaf spot on Ranunculus





Pseudomonas leaf spot on Hibiscus



- ❖ **FRAC M1 Copper** – many choices from organic products like Camelot O, Kalmor and Nordox to older standards like Kocide 3000, Phyton 27 and Champ.
- ❖ **FRAC M3 Mancozeb** – (like Protect T&O, Dithane and Manzate).
- ❖ **Biologicals *Bacillus* based biologicals** like Cease, Stargus and Triathlon BA.
- ❖ **DDAC** – KleenGrow - generation 4 quaternary ammonium combination with isopropyl alcohol (do not assume generation 3 quats work as well).
- ❖ **Plant extracts** – EcoSwing and Regalia.





- 1. Get a lab diagnosis for diseases you do not easily recognize.**
- 2. Use only healthy cuttings, seedlings or liners.**
- 3. Do not overhead irrigate highly susceptible crops if possible, or irrigate when leaves will dry rapidly.**
- 4. Discard all infected plants.**
- 5. Sanitize beds/benches between crops.**
- 6. Rotate fungicides between different FRAC groups to limit possibility of fungicide resistance. You have MANY choices!**

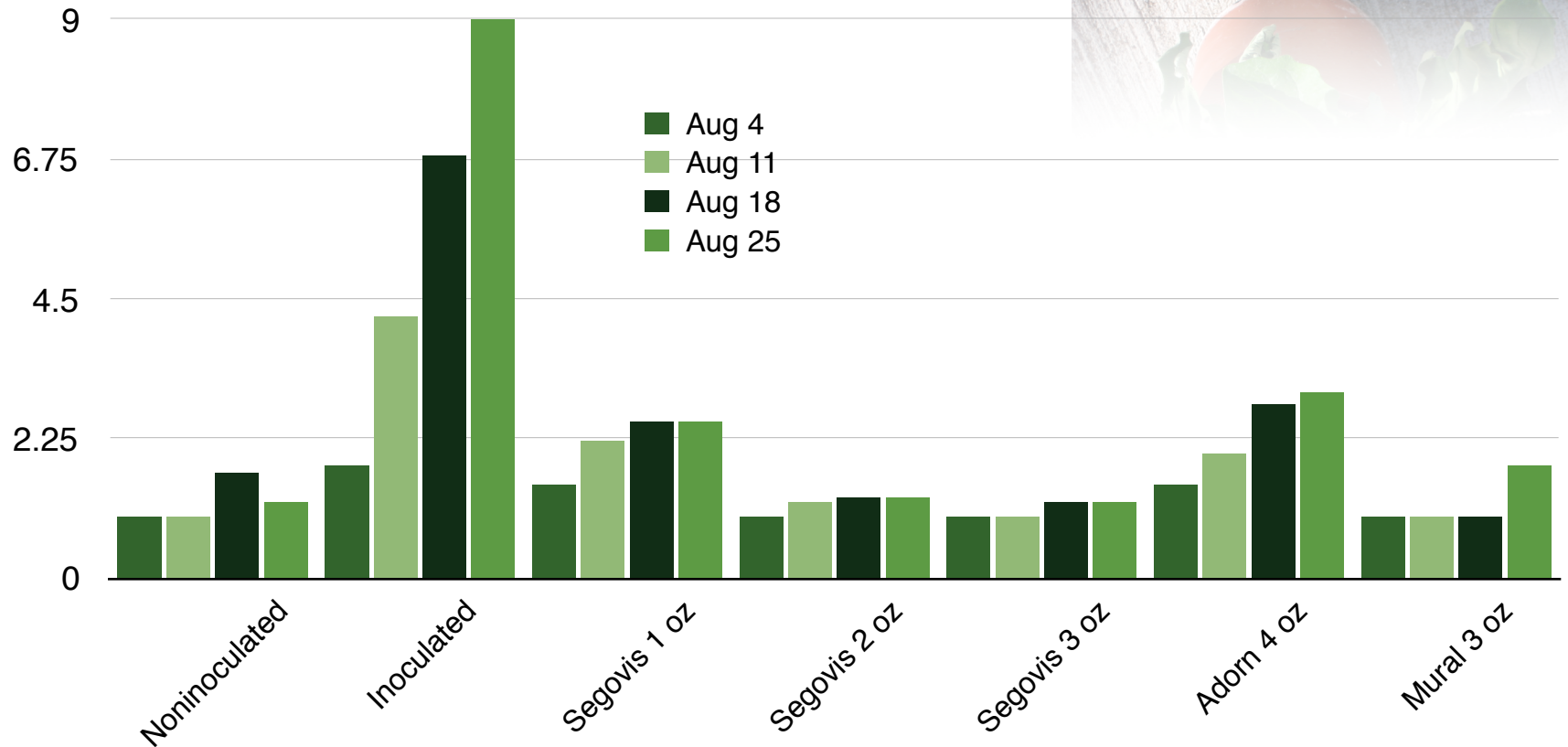
Phytophthora foliar blight on Ivy Norman, TREC-UF



Treatment	rate/100 gal	% damaged foliage
Noninoculated control	—	0
Inoculated control	—	66
Segovis	1 oz	0
Segovis	2 oz	0
Segovis	3 oz	0
Subdue MAXX	1 oz	88
Micora	8 oz	0

Gerber daisy - *Phytophthora* crown rot

Peduto-Hand, OSU



- FRAC 4 Mefenoxam (Subdue Maxx) - works on Pythium too.**
- FRAC 14 Etridiazole (Banrot, Truban, Terrazole) - works on Pythium root rot too and Banrot covers Rhizoctonia additionally.**
- FRAC 21 Cyazofamid (Segway O) - works on Pythium too.**
- FRAC 40 Mandipropamid (Micora) and Stature (dimethomorph) OR Orvego (dimethomorph and ametoctradin).**
- FRAC 43 Fluopicolide (Adorn) - must be tank-mixed with another Phytophthora product ALWAYS.**
- FRAC 49 OXTP (Segovis) longest lasting product when used as a drench. Also very good on aerial blight.**

The Best Eradicants

Disease	Best eradicator (s)	Cultural changes
Downy mildew	Subdue MAXX FRAC group 40 Phosphonates (impatiens)	<ul style="list-style-type: none"> • Fans to reduce relative humidity (RH) • Irrigate when leaves will dry quickly • Never water at night
Pythium root rot	Subdue MAXX (won't work if the pathogen is resistant) Etridiazole	<ul style="list-style-type: none"> • Change irrigation, light level etc. to improve cultural conditions. • Doing this alone can result in "cure". • Plants can outgrow this disease.
Phytophthora stem rot	Segovis FRAC group 40	<ul style="list-style-type: none"> • Nothing likely to help once symptoms appear. • Throw away symptomatic plants and treat the rest.
Powdery mildew	FRAC group 3 Palladium	Reduce relative humidity (RH)
Botrytis	Decree best at killing spores Astun, Broadform Palladium	<ul style="list-style-type: none"> • Reduce RH - water early in the day • Heat and vent at dusk • Keep leaves dry
Rust	Heritage or Mural FRAC group 11	<ul style="list-style-type: none"> • Be sure to use a wetting agent or the fungicide may not penetrate the pustule. • Keep leaves dry
Anthraco nose	Pageant Intrinsic or Broadform Spectro	Avoid wounding