

Grower Annual Disease Control 2019 Update



Winter

1. Cold damage
2. Downy mildew - Salvia, digitalis, snapdragons, coleus, impatiens, lavender, pansy, rose, rudbeckia
3. Botrytis and Sclerotinia - peony, fuchsia, NG impatiens, hydrangea, digitalis - everything

Year-round concerns

4. Viruses

A. Symptoms

- i. Tospovirus
- ii. Alternanthera mosaic virus - purslane
- iii. TMV

B. Sanitation

C. test kits

5. Bacterial leaf spot

A. Symptoms, salvia - various, bougainvillea - Pseudomonas, rex begonia - Xanthomonas

B. Bactericides

Summer

6. Phytophthora - Alamanda, pansy, hibiscus



Top-left - fertilizer deficiency on geranium due to cold roots.

Top-right - cold damage during shipping of zinnia plugs

Middle-left - cold water droplets due to condensation above the Kalanchoe

Middle-right - Cold damage on New Guinea Impatiens

Bottom-left - cold water damage on sensitive white tissue of New Guinea Impatiens

Bottom-right - fertilizer deficiency on Citronella due to cold roots

Felicia
Gaillardia
Osteospermum
Helianthus

Kale, Iberis
Alyssum, Broccoli
Erysimum, Stock
Cabbage

Pansy
Viola

Red Salvia
Blue Salvia
Coleus

Delphinium
Larkspur

Snapdragon
Linaria

Lettuce
Osteospermum

Rose
Raspberry



















Cultural Control

Temperatures between 41 and 70 F are ideal for development of snapdragon DM. Maintain greenhouse RH (relative humidity) below 85% as much as possible. Do not overhead irrigate and use fans to reduce RH and dry leaves. Leaf wetness of 6 hours or more is needed for sporangia release and thus disease spread.

Summary of Trials for Control of Snapdragon Downy mildew

Product	FRAC #	Rate/ 100 gal	Interval	Notes
Adorn	21	2 oz		Must be mixed with another DM product per label directions.
Aliette	33	1 lb	Weekly	Don't use higher rate - it is less effective then the 1 lb rate.
Dithane	M3	1.5 lb	Weekly	Preventative only.
FenStop	11	7 oz	Weekly	Can be phytotoxic at high label rates on small plants - do not exceed 7 oz/100 gal.
Heritage	2-4 oz		14-21 days	Limit consecutive sprays to avoid marginal burning/ phytotoxicity. Use 7 day interval for curative action.
Micora	40	4-8 oz	Weekly	Do not alternate with another FRAC 40.
Protect	M3	1 lb	Weekly	Preventative only.
Segovis	49	1-3 oz	Monthly	Spray and drench each very effective.
Stature	40		Weekly	Do not alternate with another FRAC 40.
Subdue MAXX	4	1-2	Weekly	Must be mixed with another DM product when sprayed for DM as per label directions.
Vital	33	6 pt	Weekly	Do not alternate with another FRAC 33.

Effect of fungicides on Impatiens downy mildew



Treatment	Rate/100 gal	Interval
Inosco	8 pint	14 day
Segovis	3.2 oz	30 day
Alude	2.5 quart	30 day
Orkestra Intrinsic	10 oz	twice on 7 day
Adorn	3 oz	30 day
Subdue Maxx	2 oz	21 day
Stature SC	12.25 oz	14 day
Pageant Intrinsic	18 oz	twice on 14 day





