

GOT MOLD? AND NO RONILAN?...

DISEASE UPDATES

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Sclerotinia sclerotiorum (white mold) produces black seedlike structures called **sclerotia** that reside in the soil, and are the overwintering and survival structures for the fungus.



Apothecia-baby mushrooms



Apothecia
ejecting spores



Botrytis cinerea
(Gray Mold)
High risk with
decaying or wilted
tissue or senescent



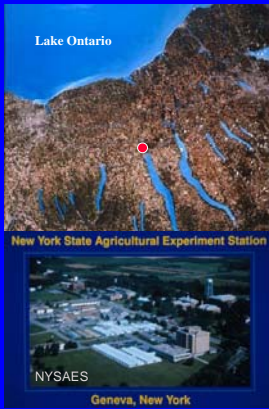
leaves on the ground
(ie. resulting from
drought stress, hail,
frost, or injury).
Infection is faster with
nutrients sources.

Management Strategies to Control White and Gray Mold

- Maintain good air drainage by avoiding close proximity to hedge rows.
- Avoid narrow row spacing to facilitate good air flow and drying of foliage.
- Avoid plant injury which provides nutrients for ingress of fungi.
- Avoid over-fertilization and frequent irrigation.
- Control weeds because weeds provide additional sites for sporulation and a favorable microclimate for infection.

Management Strategies to Control White and Gray Mold (continued)

- Rotate fields with grains and corn, nonhosts of *Sclerotinia*.
- Incorporate debris immediately following harvest so microorganisms have the opportunity to feed on the survival structures called sclerotia.
- Apply fungicides at flowering, and ensure good blossom coverage.
- Avoid varieties prone to split sets or that have a prolonged blossom period. Evenness of bloom makes spray timing and life easier.



Lake Ontario

New York State Agricultural Experiment Station

NYSAES

Geneva, New York

The planting date of **Gold Mine** beans was June 4, 2004. Chemical applications: 1st July 15, averaged 27% bloom 2nd July 20, averaged 100% bloom to pin pods. Then the plants were inoculated with spores of *Sclerotinia* and *Botrytis*. After the second spray a row cover was applied over the entire plot.



2004 Trial Results Treatment and rate/A (2 sprays)	Gray mold (%) on pods	White mold (%) on pods
Control	21.4 a	13.9 a
Ronilan 50DF 1 lb	1.3 e	0.3 de
Omega (fluazinam) 500F 8 fl oz, r*	9.9 bc	0.9 de
Endura (BAS510) 70WG 5.5oz, r*	3.9 de	1.6 cde
Topsin M 70WP 1.4 lb	21.6 a	0.0 e
Endura 5.5 oz + Top M 0.7 lb	2.4 de	0.1 e
Rovral 4F 2 pt	2.8 de	0.6 de
Rovral 1 pt + Top M 0.7 lb	4.5 de	0.2 de
Switch 62.5WG 14.0 oz	3.5 de	1.0 de
Bravo WS 1.5pt + Top M 0.7lb	6.9 bcd	0.0 e
Elevate 50WDG 1.5 lb	7.1 bcd	4.3 bc
SerenadeMx1lb+Endr5.5+Biotune	2.7 de	2.9 cd

*plants received 0.2 inches of gentle rain before treatment had dried

Product comparison*

Fungicide	Class of fungicide	Mode of action	General information
Endura (Boscalid)	Carboxamide (anilide) Group 7 fungicide	Deprives the fungal cell of its energy source and eliminates the availability of chemical building blocks for synthesis of essential cellular components.	Protectant, Limited curative, Locally systemic, Translaminar
Ronilan (Vinclozolin)	Dicarboximide Group 2 fungicide	Inhibits spore germination, germ tube growth, appressorium formation and mycelial growth.	Protectant Curative Systemic

*from BASF Fungicide Quick Reference Product Guide-2004

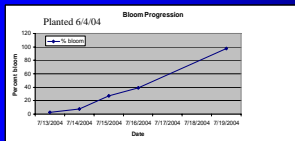
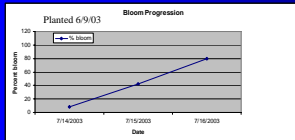
Effective use of Endura

- The application strategy for Endura (and the other alternatives) is different from Ronilan. Endura needs to be used as a protectant, (applied before you see disease) like Topsin M, since Endura is only a "limited curative" and has a different mode of action from Ronilan. Apply twice, first at 20-40% bloom, and the second application according to weather conditions.
- Blossom coverage must be excellent, since Endura is only locally systemic and translaminar (doesn't move in the plant as effectively as Ronilan).
- Rates exceeding 5.0 to 5.9 oz/acre have generally NOT provided improved efficacy in our experimental trials.

TIMING, TIMING, TIMING (spray early)

COVERAGE, COVERAGE, COVERAGE (multiple nozzles/row, drops, pressure; achieve excellent coverage of blossoms)

TIMING, TIMING, TIMING (spray early: 20-40% bloom)



Year	Percent bloom increase per day
2003	36
2004	16

Fungicide efficacy 1997-2004 Treatment + rate/acre	% of times gray mold control	% of times white mold control	Number of times tested
Ronilan 1 lb	85	85	13
Endura, various	100	60	15
Topsin M 1.4 lb	0	100	11
Endura5.5,5.9+TopM 0.7	100	100	2
Rovral 4 F 2 pt	69	85	13
Rovral 1 pt+Top M0.7 lb	38	100	8
Bravo1.5pt+Rovral 1pt	100	100	1
Bravo1.5pt+Top M 0.7 lb	100	100	2
Elevate WDG 1.5 lb	50	50	2
Quadris15.4fl oz/Amistr5	36	18	11
Omega 500F 8 fl oz	50	50	2
Kaligreen+TopM+Actv	100	100	1
Switch (11 or 14 oz)	78	56	9

Approx. Pesticide Cost for 2 sprays (2005)

Chemical	Rate/A	Cost \$/A
Topsin M	1.4 lb	50.40
\$18.00/lb	0.7 lb	25.20
Rovral	2.0 pt	87.50
\$175/gal	1.0 pt	43.75
Endura	11.0 oz	132.00
\$6.00/oz	6.0 oz	72.00
Switch	14.0 oz	123.20
\$4.40/oz	11.0 oz	96.80

Ronilan cost ~ \$47/A (2 sprays)

Chemical Control Guidelines

•Ronilan is still the most effective product to date for consistent control of both molds, and is the most forgiving on timing.

•Endura provides excellent gray mold control; Topsin M is excellent for white mold control.

•Try the tank mix of Endura (5.5 or 5.9 oz) + Topsin M 0.7 lb.

•Or try Rovral (2 pt) or the tank mix of Topsin M (0.7 lb) + Rovral (1 to 2 pt).

•Apply alternatives twice: first at about 20-40% bloom, and later according to weather conditions and label limitations. Do not wait too long to apply the first spray! It is better to err on the side of spraying too early.

Contans, *Coniothyrium minitans*, a mycoparasite



Effective use of Contans, *Coniothyrium minitans*, a mycoparasite

- Accurately identify the disease as *Sclerotinia*.
- Apply Contans with excellent coverage since it must be in contact with the sclerotia to destroy them.
- Prepare the ground, apply Contans (2 lb/A), and shallow incorporate or irrigate to incorporate.
- Do not turn soil profile after application to avoid bringing up untreated soil with viable sclerotia.
- Contans needs 3-10 weeks to colonize sclerotia.
- Reapply after final fitting any time a susceptible crop is grown (2 lb/a).
- Apply Contans (1 lb/A) to *Sclerotinia*-infected debris immediately following harvest and then incorporate the debris into the soil.