

# Onions

## Botrytis Diseases

Howard F. Schwartz and Michael E. Bartolo

These diseases may be caused by one or more of the following pathogens *Botrytis allii* Munn or *B. aclada*, *B. squamosa* J. C. Walker, and *B. cinerea* Pers. The first fungus is the principal species affecting onions in western states. Neck rot is primarily a storage disease, although infection originates in the field as leaves and necks mature or are injured, and become infected by spores blown from infested onion debris and improperly disposed cull piles. Colorado State University studies during 1988-89 recorded an average of six to 23 Botrytis spores/hour while monitoring diseased culls from June through September. A leaf blight may occur as leaf tips die and small oval, whitish to yellowish spots form on leaves (blast). A soil-line rot and scape blight can also occur on onions grown in western regions. The soil line rot appears to be more severe on transplanted onions and during periods of cool (less than 75° F), moist weather. Blighting and girdling of onion scapes (seed stalks) shows up as whitish, necrotic, shrivelled tissue usually with sporulation on the surface or below the epidermis of the lesion.

Storage symptoms appear as a softening of the tissue in the upper part of the bulb, especially around the neck area, and progresses downward toward the basal plate. Infected tissue is brownish and soft, and often exhibits gray mycelium and thin black sclerotia on and between infected scales. Larger sclerotia may form on the surface of the neck and outer scales. Infection is favored by high moisture conditions near maturity. The fungus may spread to other bulbs in storage under moist conditions. Germinating spores (of *Botrytis cinerea* Pers. ex. Fr.) also can induce a superficial discoloration (brown stain) of dry, outer scales with no further development.

Disease management recommendations include crop rotation out of onions for three years; sanitation of cull pile and onion debris; use of clean seed and transplants; planting early maturing varieties at moderate plant densities; no application of nitrogen fertilizer after bulbing; apply effective fungicides such as mancozeb (Manzate, Penncozeb), chlorothalonil (Bravo), and iprodione (Rovral) after bulbing begins and weather conditions favor infection; undercut onion roots or harvest at full maturity when necks top over naturally and ideally during dry weather; air-dry and/or heat treat (at 90 to 95° F) bulbs before storage to heal injuries and cure the neck region; store at 32° F with a relative humidity less than 70 percent.

*Product list for Botrytis Disease:*

<b>Fungicide Common/Trade Name</b>	<b>Rate</b>	<b>Application Frequency (ai oz) (days)</b>	<b>Preharvest interval, Remarks</b>
<b>Boscalid</b>			
Endura	6.8 oz/A	7-14 days	7 days PHI. Maximum of 6 times and 41 oz/season
<b>Chlorothalonil</b>			

Bravo 720, Ensign Bravo 90DG, DF	1.5-2 pt 0.8-1.7 lb	7-10 days	7 days PHI for dry bulbs; 14 days PHI and maximum of 7- 10 days 3 applications season for green onions
<b>Cyprodinil + Fludioxonil</b>			
Switch	11-14 oz	7-10 days	7 days PHI. Maximum of 56 oz, 30 day plant-back restriction
<b>Dicloran</b>			
Botran 75	1.5-2.6 lb	14 days	Maximum of 5.3 lb. Do not follow with spinach.
<b>EBDC</b>			
Penncozeb 75DF, 80W Manzate 200	2.0-3.0 lb	7 days	7 days PHI. Make first application when disease appears. Do Not apply more than 30.0 (80W), 32.0 (75DF), or 24 (200) lb product/season. Do Not apply to exposed bulbs.
Dithane DF, F45	2.0 – 3.0 lb (DF) 1.6-2.4 qt (F45)	7-10 days	5 days PHI. Do not exceed 25.6 lb (DF) or 19.2 qt (F45) product per season.
Manex, Maneb+Zn	3.2-4.8 pt		7 days PHI, maximum of 48 pt
Maneb 75DF, 80W	2.0-3.0 lb	7 days	Make first application when disease appears. Do Not apply more than 30.0 (80W) or 32.0 (75DF) lbs product/season. Do Not apply to exposed bulbs; 7 days PHI.
ManKocide	2.5 lb		7 days, maximum of 160 lb.
<b>Iprodione</b>			
Rovral 4F	1.5 lb	7 days	7 days, maximum of 5 sprays.
<b>Metalaxyl + chlorothalonil</b>			
Ridomil/Bravo	2 lb	7-14 days	7 days PHI and 4 applications for dry bulbs; 21 days PHI and 3 applications for green onions.

## **Pyraclostrobin + Boscalid**

---

Pristine	14.5-18.5 oz	14 days	Rotate with other chemistry Maximum of 6 applications and 111 oz/season; alternate with other fungicides; 7 day PHI
----------	--------------	---------	---

---

## **Pyrimethanil**

---

Scala SC	18 oz	7-14 days	Maximum of 54 fl oz per season; 7 day PHI
----------	-------	-----------	--

---

*The information herein is supplied with the understanding that no discrimination is intended and that listing of commercial products, necessary to this guide, implies no endorsement by the authors or the Extension Services of Nebraska, Colorado, Wyoming or Montana. Criticism of products or equipment not listed is neither implied nor intended. Due to constantly changing labels, laws and regulations, the Extension Services can assume no liability for the suggested use of chemicals contained herein. Pesticides must be applied legally complying with all label directions and precautions on the pesticide container and any supplemental labeling and rules of state and federal pesticide regulatory agencies. State rules and regulations and special pesticide use allowances may vary from state to state: contact your State Department of Agriculture for the rules, regulations and allowances applicable in your state and locality.*

Categories: Onion, Diseases, Fungal diseases, Botrytis Diseases

Date: 04/01/2007