

**BOTRYTIS BLIGHT OF BAREROOT CONIFER SEEDLINGS,  
CLIFTY VIEW NURSERY, BONNERS FERRY, IDAHO**

R. L. James  
Plant Pathologist

Cooperative Forestry and Pest Management  
USDA Forest Service  
Northern Region  
Missoula, Montana

August 1986

*Nursery Disease Notes No. 39*

---

Groups of chlorotic and necrotic 2-0 bareroot grand fir (Abies grandis (Doug.) Lindl.) seedlings were recently examined at the Clifty View Nursery, Bonners Ferry, Idaho. The fungus Botrytis cinerea Pers. ex Fr. was sporulating profusely at the base of affected seedlings (figure 1). Occurrence of this fungus was most evident in the most dense portions of beds. The fungus was sporulating primarily on live and necrotic tissues where there was very little air circulation and relative humidity was high.

In other beds, 2-0 Colorado blue spruce (Picea pungens Engelm.) seedlings with tip dieback symptoms (figure 2) were examined. Affected seedlings were scattered rather than being in groups. Previously, Sirococcus strobilinus Preuss had been found causing similar symptoms on bareroot Engelmann spruce (Picea engelmanni Parry) at the nursery (James 1985). However, examination of necrotic tissues, which had been placed in moist chambers to induce fungal sporulation, and isolations on water agar failed to yield S. strobilinus. Instead, profuse sporulation by B. cinerea was evident on necrotic tips. This fungus was also isolated most frequently from sampled tissues.

Therefore, it appears that B. cinerea was the cause of seedling mortality and tip dieback of grand fir and blue spruce seedlings at the Clifty View Nursery. This fungus is much more common in container nurseries (James 1984), but has previously been reported as causing diseases of bareroot stock in northern Rocky Mountain nurseries (James 1980; James, Woo, and Malone 1983). Botrytis blight occurs when conifer seedling foliage remains wet for extended periods (James 1984). In bareroot stock, the disease can be prevented by reducing seedling density, controlling irrigation to allow foliage to dry, and by applying fungicides. Efficacy of fungicides is influenced by extent of chemical penetration through the seedling canopy, the type of fungicide used, and the ability of pathogen populations to develop tolerance to the chemicals (James 1984). Chlorothalonil (Bravo<sup>®</sup>), dicloran (Botran<sup>®</sup>), and Captan<sup>®</sup> are commonly used to control Botrytis blight in northern Idaho. Other chemicals<sup>®</sup> that have been effective<sup>®</sup> against this pathogen include vinclozolin (Ornalin<sup>®</sup>) and iprodione (Chipco<sup>®</sup>) (James, Woo, and Myers 1982; James and Genz 1983). However, fungicide tolerance may develop quickly to any of these chemicals if they are used alone at high concentrations (James and Gilligan 1985). Therefore, it is recommended that fungicides be applied only when necessary at the lowest rates that are effective, and be rotated so that pathogen populations are not pressured to develop tolerance.

#### LITERATURE CITED

- James, R. L. 1980. Engelmann spruce needle and twig blight at the Coeur d'Alene Nursery, Idaho. USDA Forest Service, Northern Region. Rept. 80-21. 5 p.
- James, R. L. 1984. Biology and management of Botrytis blight. In: Murphy, P. M. (Compiler). The Challenge of Producing Native Plants for the Intermountain Area; Proceedings--Intermountain Nurseryman's Assoc. 1983 Conf. USDA Forest Service, Intermountain For. and Range Exp. Sta. Gen. Tech. Rept. INT-168. pp. 39-43.
- James, R. L. 1985. Sirococcus tip blight on bareroot Engelmann spruce seedlings at the Clifty View Nursery, Bonners Ferry, Idaho. USDA Forest Service, Northern Region. 3 p.
- James, R. L. and D. Genz. 1983. Fungicide tests to control Botrytis blight of containerized western larch at the Champion Timberlands Nursery, Plains, Montana. USDA Forest Service, Northern Region. Rept. 83-12. 8 p.
- James, R. L. and C. J. Gilligan. 1985. Resistance of Botrytis cinerea to vinclozolin, iprodione and dicloran. USDA Forest Service, Northern Region. Rept. 85-3. 22 p.
- James, R. L. , J. Y. Woo, and J. F. Myers. 1982. Evaluation of fungicides to control Botrytis blight of containerized western larch and lodgepole pine at the Coeur d'Alene Nursery, Idaho. USDA Forest Service, Northern Region. Rept. 82-17. 13 p.
- James, R. L. , J. Y. Woo, and P. L. Malone. 1983. Evaluation of fungicides to control Botrytis blight in western larch seedbeds at the Coeur d'Alene Nursery Idaho. USDA Forest Service, Northern Region. Rept. 83-6. 8 p.



Figure 1.—Bareroot grand fir seedling with profuse sporulation of Botrytis cinerea on necrotic tissues at its base.

Figure 2.—Bareroot blue spruce seedling with tip dieback associated with infection by Botrytis cinerea. Affected seedlings were scattered throughout seedbeds.

