

Nursery Application of Benomyl Fungicide for Field Control of Brown-Spot Needle Blight (*Scirrhia acicola* (Dearn.) Sigg.) on Longleaf Pine (*Pinus palustris* Mill.)

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*A benomyl fungicide treatment of longleaf pine (*Pinus palustris* Mill.) seedlings generally improves field survival and significantly controls brown-spot needle blight infection.* (Tree Planters' Notes 37(1):5; 1986)

A benomyl (Benlate®) fungicide treatment of the roots of longleaf pine (*Pinus palustris* Mill.) seedlings at the nursery during the packing operation generally improves field survival and significantly controls brown-spot needle blight caused by the fungus *Scirrhia acicola* (Dearn.) Sigg. Forest pathologists of the Southern Forest Experiment Station and Forest Pest Management (region 8) in recent cooperative studies have found the benomyl treatment to be extremely effective in every test completed to date.

Benomyl has been recently registered by the EPA as a root-dip treatment for the control of brown-spot needle blight on longleaf pine prior to packing at the nursery or at the forestation site (Supplemental Labeling EPA Reg. No. 352-354). Under this new labeling, seedling roots are prepared by dipping them in clean water and allowing excess

water to drain off. Seedling roots are then covered with a benomyl-kaolinite clay mixture [1 ounce of benomyl (WP-50) and 9.5 ounces of dry kaolinite] by shaking roots for 15 to 20 seconds in a suitable container, such as a plastic bag, containing the clay mixture. This represents a dosage rate of 5 percent (wt/wt) active ingredient.

Based on these guidelines, nurseries can now treat a large number of longleaf pine seedlings with benomyl prior to packing and storing for shipment to their customers. Benomyl can also be applied by those nurseries that use a kaolinite clay mixture as the packing material for seedling storage. The benomyl-kaolinite solution in this case is made in a mixing tank by combining 50 pounds of the clay and 5.25 pounds of benomyl with enough water to obtain a solution that will adhere to the root systems of the seedlings. This benomyl-clay mixture should be sprayed on the seedlings' roots as they are packed in the shipping bags. Each nursery can modify these amounts to the capacity of its mixing tank, while maintaining the ratio of benomyl (WP-50) to kaolinite clay at 1 to 9.5, by weight.

When using the solution, several precautions should be noted: (1)

Before using benomyl, read and carefully observe the cautionary statements and all other information appearing on the product label; (2) avoid applying the mixture to seedling foliage; (3) avoid exposing the roots to abnormally high temperatures (that is, above 90 °F), freezing temperatures, or to excessive drying conditions; and (4) use special care to avoid loss of the mixture from the treated roots during seedling packing, storage, transport, and field planting.

A paper summarizing all the experimental results of benomyl-clay treatment in the nursery will be published in a forthcoming issue of Tree Planters' Notes. Further information on the supplemental labeling is given in the agricultural bulletin issued by E. I. Du Pont De Nemours & Co. dated November 16, 1984, and entitled, Supplemental Labeling, EPA Reg. 352354, Benlate® Fungicide for Control of Brown-spot Needle Blight on Longleaf Pine. Specifics of using benomyl on longleaf pine can be obtained from A. G. Kais, Southern Forest Experiment Station, P.O. Box 2008, GMF, Gulfport, MS 39505, phone (601) 864-8256; or C. E. Cordell, Forest Pest Management, P.O. Box 5895, Asheville, NC 28803, phone (704) 259-0643.