

ABSTRACT OF EFFECT OF METHYL BROMIDE FUMIGATION ON GERMINATION OF SOUTHERN PINE SEED

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Seed entering the United States are inspected and usually fumigated with methyl bromide to prevent entry of insects into this country.⁴ Since there has been some indication that this fumigation adversely affects the seed a study was made at the Eastern Tree Seed Laboratory in cooperation with the Plant Quarantine Division, Agricultural Research Service, to determine the effects of methyl bromide fumigation on longleaf, slash, and loblolly pine seed germination. Seed of each species were fumigated by the Plant Quarantine Division at Washington, D.C. The seed had moisture contents of 5, 10, and 15 percent; fumigation levels of methyl bromide were 0, 0.5, 1.0, and 2.0 times that normally used to fumigate seed.

Analyses of the data showed a significant difference in germination of longleaf and slash pine seed among moisture content levels within each fumigation treatment level. Fumigating at regular dosages did not adversely affect germination of loblolly pine seed at 5, 10 and 15 percent moisture content; slash pine at 5 and 10 percent moisture content, and longleaf at 5 percent moisture content. Fumigating at twice regular dosage reduced germination of loblolly pine seed at 15 percent moisture content and slash and longleaf at 5, 10 and 15 percent moisture content. This means that both moisture content and dosage level are important in fumigating these and perhaps other tree seed.

Apparently it is safe to apply normal levels of fumigation to longleaf pine seed at 5 percent moisture content and to loblolly and slash pine seed at 5 and 10 percent moisture content.

In view of these experimental results with the three southern pine species, persons who handle seed that are to be fumigated should reduce the amount of seed moisture to about 5 percent.

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⁴United States Department of Agriculture. Plant Quarantine Treatment Manual. Agr. Res. Serv., Plant Quarantine Div., Washington, D.C.