

coloration began to improve and by October when the seedlings were mulched for the winter, the coloration was again about normal.

Experience and observations from the experiment indicate that early sprayings with light applications (40-60 gal. per acre) when seed coats are still on the seedlings will control the weeds and cause no harm to the trees. Spraying should be repeated whenever necessary to control the weeds but it should be remembered that best control is obtained if weeds are not allowed to get too large between sprayings. Supplementary hand weeding should accompany the chemical treatment in order to control those few weeds which are resistant to the spray.

Difficulty in getting an even distribution of the spray material was encountered in the use of the hand sprayers. Some type of mechanical sprayer is being contemplated for future use, but even with the crude methods used it was possible to reduce weeding costs as much as 50 percent.

VAR SOL TRIED ON BLACK LOCUST SEEDBEDS

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During the summer of 1950 we had occasion to try Varsol on black locust seedbeds at TVA's Clinton Nursery. It wasn't a planned experiment, but rather a case of necessity. We had a long period of wet weather and couldn't get on four of our beds with cultivators. Rather than lose these beds to crabgrass, we decided to try spraying with Varsol.

We used an application rate of 25 gallons per acre on two of the 400-foot beds and 35 gallons per acre on the other two. Each bed was sprayed twice, with an interval of three weeks between sprayings. The first was applied when the black locust seedlings were about four inches high, and still green and succulent. The crab grass was half this high and completely covered the beds.

This first spraying killed about half of the grass--and about a third of the seedlings. That's roughly 27,000 of the estimated 80,000 in the four beds.

At the time of the second spraying the seedlings had reached a height of eight inches and their foliage made a tight canopy over the beds. Some of the grass and weeds protruded above this canopy but the bulk was underneath. As a result only the exposed portions were killed by spraying. The locust seedlings suffered a 50 percent temporary defoliation; practically none were killed-

On the basis of this very limited experience we offer these observations for whatever they may be worth:

1. Both application rates had the same apparent effect.
2. Varsol should not be used on locust seedlings while stems are succulent.
3. Later application caused only temporary defoliation.
4. Spraying from above after the seedling canopy has closed does no good. To be effective spray would have to be applied below the canopy.
5. Seedling production on the four beds was cut about one-half by the spray and weed competition.

STUDY OF METHYL-BROMIDE AS WEED CONTROL IN PARSONS NURSERY

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The study of methyl-bromide as a weed control in the Parsons Nursery was started in 1949. On June 1, one of the standard seedbeds, prepared for spring-sowing, was treated with Dowfume MC-2 under a gas-tight cover. The bed had been prepared in the usual manner by tilling to a depth of 6 to 8 inches with a Seamantiller. After tilling the bed was covered with a sheet of Sisalkraft paper supported above the soil on small wooden horses and covered around the edges with soil shoveled from the paths.

The methyl-bromide was applied with the "Jiffy Applicator" at rates of one-half and one pound per one hundred square feet. The air temperature was 80°F at the time of treatment and minimum temperatures were 44aF while maxima remained at 80°F for the period of treatment. The gas-tight cover was removed on June 3 after being in place 44 hours.

Unfortunately, we were unable to seed this bed to red pine as planned so the effect of the treatment on seedling emergence and growth could not be observed. For nearly a month after treatment this bed showed only two weeds and these were perennial vetch. A few volunteer black locust seedlings also emerged. After six weeks time only a small number of weeds were present and practically no grass at all. At the end of this period, adjacent, untreated beds were a solid mass of weeds and crabgrass up to 24 inches in height. Conditions for weed growth were excellent with generally high temperatures and a total of 9.89" of rainfall during