Removing black walnut hulls before direct seeding not always protection against rodent pilferage

by

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In an article in TPN, Nielson[2] reported that removal of husks before direct sowing black walnut seed assures "practically 100 percent control" of rodent pilferage. If true, this could mean that a solution has been found to a major problem in direct-seeding black walnut. Unfortunately, such a conclusion cannot be supported by the experiences of most tree planters. Over the past decade, State nurseries have shipped from 500 to 1,000 bushels of walnut seed annually to tree planters in at least 13 States,[3] and most of this seed is routinely husked before stratification and shipment. In spite of these extensive efforts to sow black walnut seed, it is a challenge to find many direct-seeded plantations that have escaped extensive rodent pilferage.

Some Recent Field Studies

Nielsen's conclusions cannot be supported by very much research either. Therefore, data from only a few recent direct-seeding studies need be cited to show that removal of walnut husks does not assure successful plantation establishment as claimed:

(1) Within 1 week after 520 seeds were sown in spots in a 200-foot diameter clearcut opening in southern Illinois, rodents had pilfered 481 of them.' The seed had been collected in the fall of 1970 from a single seed source, husked with a mechanical huller. floated to remove empty seed, and then cleaned further by tumbling in water in a concrete mixer. The seed was sown on May 24, 1971, after overwinter storage in plastic bags, and had already started to germinate when planted.

(2) Within 8 days after germinating seed was sown in four study plots in an old field in southern Illinois, rodents had pilfered 100 percent of the seed in two of the plots which were adjacent to a mature forest stand. Most of the seed in plots in the center of the area also was taken. The seed had been husked, floated, washed, and stratified as in the first example. The seeded plots made up approximately one-half of a 1.8 acre walnut plantation and had been plowed and disked prior to the seeding. The seed was sown on May 10, 1972, and was covered with at least 1 inch of soil.

(3) At the Indiana Division of Forestry Nursery, Vallonia, Indiana, 54 lots of from 100 to 200 husked walnuts were sown in November 1971. Although nursery beds were covered and mulched, by spring at least one nut had been pilfered in each of the lots and more than 40 per cent of the nuts had been pilfered to a few of the lots.

Discussion

Further correspondence with Nielsen& has provided a partial explanation of why the results of his study may have differed from ours. Although not clearly pointed out in his published article, Nielsen made a thorough effort to clean his seed. The nuts were washed over a screen using waterspray from a garden hose until the runoff water ran clear. Nuts that had even a small amount of husk material left in the crevices were cleaned further by scrubbing with a steel brush. Nuts that couldn't be cleaned thoroughly were not planted. Although we considered that the seed used in our field studies was quite clean, it probably did not meet these strict standards.

Even though there may be some question about the practical application of the cleaning procedures recommended by Nielsen, his article cannot be disregarded because it does

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[2] *Rodney R. Nielsen. Dehusking black* walnuts controls rodent pilferage. Tree Plant. Notes 24(3): 33, 1973.

[3] *Robert D. Williams and Robert E. Phares.* Black walnut seedling production and related nursery research. Northeast. Area Nurserymen's Conf. Proc.: 15-22, illus., 1973.

4 Data supplied by Richard C. Schlesinger, USDA Forest Service, North Central Forest Experiment Station, Forestry Sciences Laboratory. Carbondale. 111.

5 Personal communication from Rodney R. Nielsen, April 11. 1974.

show that husking and cleaning walnut seed prior to sowing is better than sowing unhusked seed. His recommendations should be useful to landowners who collect their own seed and sow it immediately. Nurseries that husk their walnut seed before stratification and sale should continue to do so. Much further research is needed, however, to confirm that thorough cleaning is as effective as claimed.

I˙se of high-quality seedlings plus intensive early culture have restored landowners' confidence in the potential of walnut planting: a shift to use of seed over seedlings as a result of limited field observations would be risky at this time. Direct seeding of walnut will always entail a risk of failure, but several proven techniques may help to improve success. For instance. use of protective screening can reduce some of the risks. Wire screen cones or squares and per. forated tin cans have all been used successfully, but they are hardly practical for large-scale seedings.

Several studies, such as the one by Engle and Clark [6] have shown that sowing walnut seed in the spring rather than in the fall increases chances of seedling establishment. Seeding late in the spring reduces the time, and thus the opportunity. that the rodents will have to find the seed before it germinates.

Most of the successful direct seedings of black walnut we have seen have been large areas. A possible ex.

planation has been provided by personnel of the Ohio Division of Wildlife who have studied gray and fox squirrel movements adjacent to and within clearcut forest areas ranging in size from 9.5 to 34 acres. During the summer months, only one of 13 squirrels captured on one study area had penetrated as far as 5 chains inside a clearcut opening during the first 2 years after clearcutting. Thus, squirrel predation of planted seed can perhaps be minimized if the seed is sown at least 6 chains from the edge of adjacent stands. In winter. however, squirrels traveled farther into the openings. especially during the January-March breeding period. when they tended to range over a greater area. This further substantiates our findings that spring seeding can help to reduce squirrel predation.

[6] *LaMont G. Engle and F. Bryan Clark. New* rodent repellents fail to work on acorns and walnuts. USDAA For. Serv., Cent. States For. Exp. Sin. Note 138: 2 p.. 1959.

News & Reviews

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Woodsman, spare that kenaf

A 10-foot tall member of a type of hibiscus may provide pulpmills and paper manufacturers with the "tree" of the future. The kenaf doesn't look like a tree or act like a tree, but USDA Agricultural Research Service researchers believe that the hardy hibiscus may share one very important characteristic of some trees: it provides an excellent fiber for paper manufacture. Growing to maturity in 4 months, compared to 20 years for many trees, the kenaf (pronounced kuh-NEF) produces five to seven times more pulp per acre per year than the pine tree. After 16 years of research effort to locate a suitable fiber substitute for trees. USDA scientists have zeroed in on the kenaf: honeysuckle and milkweed were two alternatives that were found unacceptable. Now scientists are working to eliminate a root parasite-the root-knot nematode-from the kenaf. If the parasite can he eliminated, the kenaf has the potential to supply some of America's increasing paper needs while preserving forest lands.
(From Soil Conservation, June 1974.)

Containerized Tree Seedlings

Tree seedlings grown in green. houses in containers were the subject of three separate articles received in the W.O. recently. Seattle Times Sunday pictorial section had a story on Coeur D'Alene (Idaho) Nursery with pictures of containerized seedlings in the greenhouse which it says are being raised for planting on difficult sites. Sandpointe (Idaho). News-Bulletin story on containerized tree seedlings says new technique shortens seed-to-tree time from 3 years to 5 months. CSU research magazine for Jan.-Mar. 1974 says Colorado State Forest Service nursery at CSU drew upon research conducted by FS's Dr. Richard Tinus at ShtJterhelt Laboratory in Bot tineau, N.D., to set up a year-long trial of growing tree seedlings in greenhouse.

'Shigometer' Developed

Dover (N. H.) Daily Democrat reports NE Station. in cooperation with U. of New Hampshire has developed a portable, electronic meter which detects hidden decay in living trees and wood products. It has been named the "Shigometer" for Dr. Alex L. Shigo of the NE facility at Durham,

Helicopter Topping Used

The Everett Daily Herald reported on Forest Service use of helicopter on Mt. Baker NF to prune top branchlets from superior but inaccessible Douglas fir trees for grafting onto young containerized trees. Method results in about 50 scions an hour as opposed to the former method (climbing tree or shooting branchlets down) which brought in only about 10 a day.

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