RESEARCH NOTE NC-140

NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE—U.S. DEPARTMENT OF AGRICULTURE

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Sapstreak Disease of Sugar Maple Found in Wisconsin for the First Time

ABSTRACT.—The first occurrence in Wisconsin of sapstreak disease of sugar maple is described. The outbreak of the disease was traced to past logging activities. To prevent further disease development, sugar maples should not be cut for a few years in areas contiguous to diseased trees.

OXFORD: 443.3 – 172.8 *Ceratocystis coerulescens* – 412:176.1 *Acer saccharum* (775):221.21. KEY WORDS: *Ceratocystis coerulescens, Acer saccharum,* shelterwood.

In July 1971 several sugar maple (*Acer saccharum* Marsh.) trees bearing typical foliar symptoms of sapstreak disease (Hepting 1944, Kessler 1971) were noticed in an old-growth northern hardwoods upland forest in Forest County, Wisconsin. The affected trees were on the Argonne Experimental Forest in the Nicolet National Forest. Axe cuts into the buttress roots of the five trees revealed the streaking pattern typical of sapstreak. Isolations from these roots resulted in the recovery of the sapstreak fungus (*Ceratocystis coerulescens* (Münch) Bakshi). All of the diseased trees bore root or lower stem scars that had been created by previous logging activities, and judging from how the streaking pattern was developing, the logging scars appeared to be the primary entry court for the fungus (Kessler 1971).

The logging in this area was done at two different times: one 17-acre block was cut during the summer of 1967 and the other, also 17 acres, was cut during late winter of 1969. Both were logged under the shelterwood silvicultural system. All sapstreak-affected trees were found in the part cut in 1967. A July survey of the portion cut in 1969 failed to reveal any trees with foliar sapstreak symptoms—even possible incipient ones. Because several years often pass between time of infection and the first display of foliar symptoms, some trees in the 1969 cutting area may subsequently prove to be infected. That the more recently logged portion of the shelterwood was cut during the winter could also prove important in explaining the absence of sapstreak there, because winter logging generally results in less root injury due to snow protection.

In the summer-cut block, five trees were affected with sapstreak. Because the primary purpose of shelterwood cutting is to develop uniform regeneration for an even-aged forest, the presence of sapstreak-affected trees in the overstory may not be too important,

particularly since the overstory is removed after the new regeneration becomes established. However, where the shelterwood provides partial shade needed for development of seedlings and restriction of herbaceous competition, premature removal of overstory trees due to sapstreak mortality could have serious consequences.

Finding the hitherto unreported sapstreak disease in a shelterwood cutting may indicate that this management system, under some situations, can produce conditions favorable for sapstreak infection. Additional shelterwood areas will be examined to learn whether this type of cutting does indeed result in an increased incidence of the disease. In the meantime, it is recommended that for the first few years following the establishment of shelterwoods, particularly when summer logging has been employed, cutting be avoided in contiguous areas. The rationale for this recommendation is that shelterwoods may prove to be good inoculum sources for the infection of injured residual stems in adjacent logged areas.

LITERATURE CITED

Hepting, G. H. 1944. Sapstreak, a new killing disease of sugar maple. Phytopathology 34: 1069-1076.

Kessler, Kenneth J., Jr. 1971. Sapstreak disease of sugar maple. USDA For. Serv., For. Pest Leafl. 128, 4 p.

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