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TECHNICAL NOTES

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White-Pine Weevil Damage Differs Significantly by Seed Source
on Two Northern Minnesota Jack Pine Plantations

During 1958 and 1959 several nonlocal sources of jack pine in one of the regional seed source study plantations showed significantly higher damage from white-pine weevil than the local source.^{1/} The plantation concerned was on the Chippewa National Forest near Cass Lake, Minn. During 1960 and 1961 comparable data were taken from the Superior National Forest plantation on the old Wanless Farm.

These plantations are but two of 17 established before the onset of the 1954 growing seasons in the three Lake States.^{2/} The plantations consist of four replications of a randomized block design, each replication with 30 seed sources. Sixty-four trees of 2-0 stock from each source were set out in 40-foot square blocks with a 5x5-foot spacing.

Table 1 shows a comparison between sources for mean number of trees weeviled per acre per year on each of the two plantations. In neither did any source have significantly less weeviling than the local stock. On the Superior plantation no Michigan source had significantly more damage than the local stock. Both plantations showed the same Wisconsin sources as having significantly more weeviling than their respective local sources.

Of particular interest are some of the Minnesota sources. Two Cass County and the Becker County sources responded in the same manner as the local source in the nearby Chippewa Plantation. These same sources were weeviled more heavily than the local source in the Superior plantation. These findings add more evidence to show that local sources appear to be better adapted to local weevil populations than other stock. Jack pine appears to respond to white-pine weevil susceptibility just as it does to some other factors of the local environment.

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^{1/} Batzer, H. O. 1961. Jack pine from Lake States seed sources differ in susceptibility to attack by the white-pine weevil. Lake States Forest Expt. Sta. Tech. Note 595.

^{2/} "Work plan for a regional jack pine seed source study in the Lake States" by Paul O. Rudolf and T. Schantz-Hansen, July 7, 1953; on file at the Lake States Forest Experiment Station.

Table 1.--Mean number of trees weeviled per acre per year in the Chippewa and Superior National Forest plantations, regional jack pine seed source study

State and county of origin	Seed source number	Mean no. of trees weeviled per acre per year	
		Chippewa N. F. 1958-1959	Superior N. F. 1960-1961
MINNESOTA			
Cass	Local	33.5	--
Lake	Local	--	53.2
Cass	1589	34.4	142.3**
Cass	1590	32.5	74.9
Itasca	1591	26.3	72.2
Lake	1592	33.5	52.1
Cook	1593	36.7	33.0
St. Louis	1594	35.8	78.3
Pine	1595	125.6**	146.0**
Pine	1596	114.1**	104.5
Becker	1597	48.2	141.4**
Cass	1600	47.1	117.3*
Beltrami	1601	30.2	74.9
Itasca	1602	49.8	80.3
WISCONSIN			
Douglas	1604	99.1**	117.3*
Bayfield	1605	12.1	69.6
Forest	1606	50.9	76.9
Oneida	1607	60.3	106.1
Burnett	1608	97.6**	121.5*
Marinette	1609	114.1**	142.3**
Oneida	1610	108.5**	195.0**
Wood	1611	116.5**	212.1**
MICHIGAN			
Gogebic	1612	104.5**	96.9
Ontonagon	1613	47.1	87.4
Alger	1614	56.1	104.5
Chippewa	1615	60.3	67.1
Manistee	1616	44.9	62.1
Ogemaw	1617	56.1	66.5
Alpena	1618	63.3	56.7
Grand Traverse	1620	30.8	24.2
Luce	1621	32.1	99.9

** Significant at the 1-percent level when compared with local source.

* Significant at the 5-percent level when compared with local source.