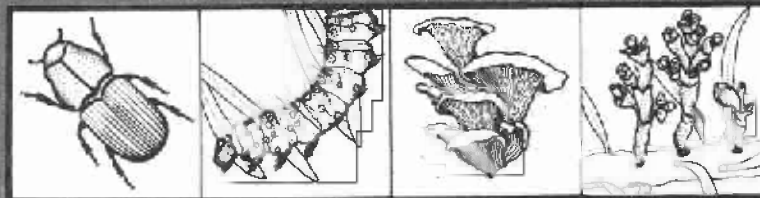


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INSECT AND DISEASE SURVEYS OF SOME INLAND EMPIRE TREE IMPROVEMENT COOPERATIVE TEST PLANTINGS

by

Oscar J. Dooling, Plant Pathologist,
and
Kenneth E. Gibson, Entomologist



ABSTRACT

Potential problem pests found were *Armillaria* root disease, pocket gopher, western pine shoot borer, and white pine blister rust. Early detection of problem pests allows management actions to be taken if needed to prevent serious impacts. Unit managers should check the areas periodically and call on pest management specialists to evaluate potential problems.

INTRODUCTION

The Inland Empire Tree Improvement Cooperative (IETIC), dedicated to selection and propagation of superior trees, has established test plantings to assist in reaching that goal. Cooperative Forestry and Pest Management (CFPM) was asked by IETIC to evaluate pests in some of these plantings. We started in 1983¹ and continued our examinations this year.

OBJECTIVES

1. Identify insect and disease pests in selected IETIC test plantings.
2. Make a preliminary estimate of pest levels and the effects they might have on progeny.

METHODS

Several plantings were checked in Montana and northern Idaho. The sampling scheme was similar to last year's.

¹Dooling, O. J., and J. E. Dewey. 1984. Insect and disease surveys of selected Inland Empire Tree Improvement Cooperative plantings and seed production areas. USDA Forest Service, Northern Region. Forest Pest Management Report 84-8. 7 p.



RESULTS

Douglas-fir

Clifty View, IETIC, T61N, R2E, Sec. 8, Idaho.--About 80 percent of the trees were infested with Cooley spruce gall adelgid [Adelges cooleyi (Gillette)].

Rimrock, Idaho Department of Lands, T59N, R3W, Sec. 19, Idaho.--About 24 percent of the trees were infested with Cooley spruce gall adelgid; 9 percent were missing or dead from unknown causes.

Grand Fir

Bench Creek, Idaho Department of Lands, T38N, R2E, Sec. 34 and 35, Idaho.--Slightly more than 15 percent of the trees were missing or dead from unknown causes.

Canal Gulch, Potlatch Corporation, T37N, R5E, Sec. 24, 25, and 26, Idaho.--About 35 percent of the trees were missing or dead from unknown causes.

Brickel Creek, Inland Paper Company, T53N, R5W, Sec. 30, Idaho.--About 3 percent of the trees were missing or dead from unknown causes.

Western White Pine

Red Star, Clearwater National Forest, T35N, R6E, Sec. 4 and 5, Idaho.--About 3 percent of the trees were recently killed by pocket gophers. Nearly 25 percent of the trees were missing or dead. It appeared that pocket gophers had been responsible for nearly all the damage. One tree was found with both Armillaria mellea Vahl. ex Fr.) and white pine blister rust (Cronartium ribicola Fisch.)

Bertha Creek, Clearwater National Forest, T39N, R6E, Sec. 6, Idaho.--About 11 percent of the trees were infected with white pine blister rust; 7 percent were missing or dead from unknown causes.

Paradise Valley, Idaho Department of Lands, T61N, R1E, Sec. 16, Idaho.--About 2 percent of the trees had recently been killed by pocket gophers. Another 5 percent of the trees were missing or dead, and it appeared that pocket gophers had been responsible for most of the damage.

Lodgepole Pine

Rascal Ridge, Clearwater National Forest, T38N, R14E, Sec. 13, Idaho.--About 8 percent of the trees were missing or dead from unknown causes.

Sutton Ranch, Idaho Panhandle National Forests, T58N, R5W, Sec. 22, Idaho.--About 3 percent of the trees were infested with western pine shoot borer (Eucosma sonomana Kearfoot), 1 percent were infected with lodgepole pine needlecast (Lophodermella concolor (Dearn.) Darker), and 9 percent were missing or dead from unknown causes.

Cellar Ogilvie, Helena National Forest, T12N, R7W, Sec. 12, Montana.--About 5 percent of the trees were missing or dead from unknown causes.

Long Gulch, Helena National Forest, T11N, R3E, Sec. 30, Montana.--About 6 percent of the trees were missing or dead from unknown causes.

Wet Park, Lewis & Clark National Forest, T13N, R7E, Sec. 9, Montana.--About 1 percent of the trees were infected with lodgepole pine needlecast, and about 12 percent were missing or dead from unknown causes.

Johnson Canyon, Gallatin National Forest, T3N, R6E, Sec. 31, Montana.--About 3 percent of the trees were infected with lodgepole pine needlecast, and 43 percent were missing or dead, probably caused by ground squirrels.

Horse Butte, Gallatin National Forest, T12S, R4E, Sec. 36, Montana.--Only about 25 percent of the original stock had survived. About 10 percent of the remaining trees had been damaged by rodents, probably ground squirrels.

Condon, Flathead National Forest, T21N, R17W, Sec. 36, Montana.--About 6 percent of the trees were dead or missing. Another 1 percent had dead terminals, probably caused by the western pine shoot borer. Needlecast was conspicuous on 5 percent of the trees. Some were lodgepole pine needlecast. The cause of the remaining needlecast was undetermined. No causal agent was identified for 4 percent of the examined trees that were badly stunted.

Western Larch

Condon, Flathead National Forest, T21W, R17W, Sec. 36, Montana.--Fifty percent of the seedlings examined were dead. Of these, 10 to 20 percent had died within the last year. Another 16 percent were still alive, but exhibited many dead branches. Some of these trees were barely alive and growing at an angle because of frost heaving. Most of these seedlings will eventually die. About 14 percent of the examined trees exhibited excessive needle browning. Most of this was attributed to winter injury, but some needle blight, caused by Hypodermella laricis Tub., was present. All trees are experiencing heavy vegetative competition. No attempt was made to count missing trees; hence total mortality exceeds the 50 percent reported here.

Ponderosa Pine

Condon, Flathead National Forest, T21N, R17W, Sec. 36, Montana.--About 48 percent of the trees had terminal leaders infested by the western pine shoot borer in March. A treatment with a synthetic shoot borer pheromone in the spring resulted in a reduction to about 16 percent of the terminals infested by fall.

Meadow Creek, Nezperce National Forest, T30N, R4E, Sec. 27, Idaho.--About 35 percent of the trees had terminals infested by the western pine shoot borer in March. A treatment with a synthetic shoot borer pheromone in the spring resulted in a reduction to about 27 percent of the terminals infested by fall.

DISCUSSION

Pest activity can thwart the objectives of the test plantings, especially those pests that reduce height growth or cause mortality. Frequent inspections are needed to detect potential problems early enough to allow management actions to be taken to prevent serious impacts.

Potential problem pests found this year were Armillaria root disease, pocket gopher, western pine shoot borer, and white pine blister rust. With the exception of pocket gophers and ground squirrels, none was causing serious damage.

We looked at 22 test plantings in 1983 and 19 this year. With these two years as baseline data, we know which pests are potentially harmful and will be of concern to IETIC. We do not feel that routine CFPM inspections should be made, but do suggest that monitoring by unit managers should continue so as to detect any potential problem pests. Unit managers may call upon pest management specialists in CFPM to evaluate any pests that may be causing them concern.