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Montana

Pathogens on spurge

Scientists are working with pathogens to aid in control of leafy spurge. Sherry Turner, after receiving her Master of Science in Plant Pathology from Montana State University, is in Frederick, Maryland screening pathogens for use on leafy spurge. Sherry's work will involve feeding studies to determine what other plants the pathogens will attack. She will also study the effectiveness of the pathogens on leafy spurge.

Fungi toxins

Plant pathologists at Montana State University are examining toxins from the fungus *Alternaria* to see if they can be used to kill leafy spurge. The toxins are being identified to see how active, effective and important they are on leafy spurge. The pathologists also need to find out if the toxins affect useful plants.

North Dakota

Forage plus $

Increased forage yields were obtained with 50 out of 59 herbicide treatments used on leafy spurge. The most economical treatments with resulting high forage yields were a combination of 1 lb/, 2,4-D and .25 lb/A of Tordon or Tordon alone at .25 lb/A. Leafy spurge control by the end of summer was only 40 to 60% but if this treatment is applied yearly the infestation should gradually decrease and at the same time result in a $20 to $25 per acre per year profit because of increased production.

Spurge in trees

Weed researchers at North Dakota State University are evaluating leafy spurge control in trees. Applications of picloram and dicamba with the controlled droplet applicator are being studied. It may be possible to apply these herbicides to control leafy spurge

without damaging the trees due to the low output per acre of the controlled droplet applicator.

Wyoming

Program Update

Wyoming's leafy spurge program, implemented in 1978, is funded by landowners, weed districts and state appropriations. Over 1800 cooperators have initially treated 35,968 acres and have retreated 29,158 acres since July, 1978 to December 31, 1981. Cooperators include private, state and federal landowners.

The program is on schedule and the effectiveness is projected at 75 to 90%. This means 10 to 25% of the original acres will have to be treated each year after the program ends in 1984 (this estimate would include new infestations, regrowth, new seedlings, etc.). Research studies by the University of Wyoming indicate that effectiveness of treatments on topgrowth is higher than projected.

A monitoring program for herbicide contamination was initiated in 1977. This involves collecting water, sediment and soil samples which are analyzed for herbicide contamination plus studying soil residues of various herbicides. During the last 5 years there were no indications of pesticides in streams at a level which would be harmful to the environment. Herbicide monitoring reports are available in the Wyoming Department of Agriculture Office.

Biological control

Canadian research

Three new insects may be released on leafy spurge this summer. Dr. Peter Harris, Agriculture Canada, expects the screening reports on *Lobesia euphorbiana* and two *Aphthona* species to be completed this winter. The reports must be approved by the committee before release of the insects. *Lobesia euphorbiana* reduces seed production and the *Aphthona* species are root-feeding flea beetles.

Dr. Harris reports that *Oberea* is surviving in small numbers at the Canadian release sites.

Biocontrol program

Directors from the Agricultural Experiment Stations in North Dakota, South Dakota and Montana and Experiment Station representatives from Wyoming and Idaho met in Rapid City, South Dakota in January. The major thrust of the meeting was to outline a program of receiving biological control agents from Canada. Each director will assess what his university has in terms of money, manpower and space to assist the biological efforts. The insects being brought in will be a diverse group, some of which will be for release on leafy spurge.

The directors from the five states hope to develop a coordinated program on biological control. The program will allow for division of responsibilities between the states and facilitate interaction with the Canadian and U.S. quarantine systems. The group of directors will meet again in Bozeman, Montana on June 22, 1982.

Other

Leafy spurge is not the only spurge being studied. Dr. A. G. Wheeler, Pennsylvania Department of Agriculture, studied spotted spurge (*Euphorbia maculata*) and several other spurges and the insects associated with the plants. Spotted spurge is an occasional weed in home lawns and becomes a major pest only in localized areas such as western New York's onion-growing region. Dr. Wheeler concluded that native spurges, such as spotted spurge, host few chewing insects that might help limit infestations of introduced, weedy spurges.

USDA money

The USDA has given a $200,000 grant to North Dakota, Montana and Wyoming for research on control of leafy spurge. The grant extends to 1984.

If anyone would like extra copies of the newsletter, to be added to the mailing list or more information on leafy spurge, please contact:

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