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# Wyoming's leafy spurge program report<sup>1</sup>

## Explanation of the State Evaluation Committee – (S.E.C.)

The S.E.C. was established through rules and regulations (Chapter XLIX; Section 1, c.) under W.S. 11-5-119 and 11-5-201 and is defined as follows.

The term “State Evaluation Committee” means the committee consisting of one representative from the following organizations: The University of Wyoming, Plant Science Division; Executive Board of Directors, Wyoming Weed and Pest Council; Wyoming Department of Agriculture; Public Land Office; Wyoming Board of Agriculture and the Governor's Office. The committee shall annually review the district evaluation reports and have the authority to conduct on-site inspections and make adjustments as they deem feasible.

The Committee shall submit an annual report each year to the Board of Agriculture, County Commissioners, Public Land Office, Governor's Office, District Evaluation Committee, and each district.

## History

Leafy spurge has quite a socio-economic impact on people. In contrast to its rapid spread in the United States, in Canada, government assistance programs for leafy spurge control has kept the weed from spreading and the extent of infestation hasn't changed markedly in 20 years. In order to have an effective program in the United States, farmers, ranchers and other land managers will need financial assistance and/or incentives to control leafy spurge. Landowners and the general public need to be educated on the severity of the problem, the socio-economic impact and what can be done about the problems. An increased effort should be made to educate those involved on current control technology. Additionally, new and more effective control technology is urgently needed. Both of these efforts will require time, people and additional money.

Leafy spurge (*Euphorbia esula* L.) is a dicotyledonous herbaceous deep-rooted perennial of the spurge (*Euphorbiaceae*) family. It is a different weed to control so the weed has spread steadily since its introduction. Leafy spurge infestations are considered serious enough to be declared a noxious weed by law in at least 19 states (13).

The Caucasus region of the Soviet Union is the origin for leafy spurge (Croizat 1945). Its distribution in Eurasia extends across Europe from Norway, England, and Portugal in

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<sup>1</sup> Period July 1, 1978 to December 31, 1982. Revised 1/83

the west; through Asia Minor – Turkey, Iran, Afghanistan and Pakistan. It occurs as far north as Siberia, and east into China where it is considered an introduced species (Bakke 1936, Prokhanov 1949).

Leafy spurge is widespread in continental Europe as far south as central Spain, Italy, and the Balkans, extending eastward through central Russia into Siberia (21). It is significant that leafy spurge apparently isn't a serious weed problem in this area of origin. The earliest report of the weed in the United States is a herbarium specimen collected in 1827 in Massachusetts, and leafy spurge has been known in North Dakota since 1909 (9). The weed was not recognized in Western Canada until the early part of the 20th Century (37). Early reports in Manitoba were from Russian Mennonite settlements where seed may have been brought with them from Russia (9). The greatest abundance of the weed now is in the northern Great Plains of the United States and the Prairie Provinces of Canada.

Introduction into Wyoming is unknown; however, leafy spurge was identified in Park County in 1944 and in Crook County in 1946. Since that time it has been reported in all 23 counties.

When considering herbicide control of leafy spurge, the nature of its infestation is of paramount importance. Leafy spurge is a very competitive and aggressive perennial plant. It has spread and increased in acreage infested in recent years from isolated areas of Wyoming to where it is reported in every county of the State. It can be found on the best agricultural land to the rocky slopes and hilltops of low productive rangeland sites.

Infestations range from solid stands where all other vegetation is virtually eliminated to isolated infestations which serve as a source of seed for its spread and subsequent usefulness of additional acreages.

Even though leafy spurge infestations on grassland and rangeland sites may not be an indication of misuse, its presence is undesirable from the standpoint of high productivity of palatable forage. To obtain the maximum sustained productivity of any pasture or rangeland site certain established practices are paramount, one of which is the control or containment of the least productive and unpalatable species.

Since cultural practices are very expensive and in most cases not practical or adaptable to non-cultivated areas, other methods of control must be made available and utilized. Since other methods of control such as biological methods have not been satisfactory the use of selective herbicides as a means of removing the undesirable herbaceous weed has received considerable attention.

## **Background information on Wyoming's leafy spurge program**

The concept of the program started in 1974, but met with failure due to lack of interest and finances. Increased interest in 1977 revived the program after representatives from the Wyoming Weed and Pest Council, University of Wyoming, and Wyoming Department of Agriculture met with members of the Legislative Appropriations Committee to review the seriousness of the leafy spurge problem. From the outcome the Department of Agriculture was requested by the Governor to draft a program to be presented to the Legislature for consideration.

On January 19, 1978, a proposed budget was submitted at the Joint Appropriations budget hearing requesting funds to carry out the treatment program on State and private land. It was the desire of the Appropriations Committee that the proposed budget be introduced as a bill rather than a line item entry in the Department of Agriculture budget. House Bill No. 53 was introduced by Kenneth Gropp, State Representative, Niobrara County.

### **Leafy spurge law**

The Leafy Spurge Program was enacted March 8, 1978, and is a special act under the Wyoming Weed and Pest Control Act.

### **Organization**

1. The leafy spurge program is a state-wide act whereas all State and local governmental entities shall comply with the program.
2. The State Board of Agriculture shall adopt rules and regulations with the approval of the districts to implement an effective program.
  - a. The treatment program shall be under the direction of the district board.
  - b. The overall program shall be coordinated by the State Department of Agriculture.
  - c. State and district evaluation committees were established to annually review the district's program and submit reports and make adjustments as they deem feasible.
  - d. The districts obtain landowner agreements prior to initiating a program on the landowner's property.
  - e. Districts requesting State-appropriated funds submit plans each year prior to carrying out the treatment programs.
  - f. Districts submit annual progress reports each year.

### **Funding; private, district and state**

1. Landowner contributes 20% of the cost of the treatment program, but not to exceed a total of \$60.00 per acre.
2. Districts contributed 80% of the cost of the treatment program.
  - a. Districts are authorized to levy up to an additional mill to fund its contribution.
3. State (Wyoming Department of Agriculture) contributes the balance which cannot be funded by the districts.
  - a. The total cost on State land administered by State Land Office, is paid for by Public Land Offices.
4. State Legislature appropriated \$1.4 million for the 79-80 biennium, \$1.2 million for the 81-82 biennium, and 1.7 million for the 83-84 biennium, to carry out the intent of the act.

- a. 79-80 biennium
  - i. Private lands - \$885,000.00
  - ii. State lands - \$514,000.00
- b. 81-82 biennium
  - i. Private lands - \$1,252,355.00
- c. 83-84 biennium
  - i. Private lands - \$930,304.00
  - ii. State lands - \$765,000.00

**Penalty**

Any landowner who refuses to perform remedial requirements to control leafy spurge after due notice as required by W.S. 11-5-109 is subject to a civil penalty not to exceed one hundred dollars (\$100.00) per day for each day the landowner is in violation but not to exceed a total penalty of five thousand dollars (\$5,000.00) per year.

**Rules and regulations**

The original rules and regulations were adopted in July, 1978, by the State of Agriculture in compliance with W.S. 11-5-119, 11-5-201, and the Wyoming Administrative Procedures Act for the purpose of carrying out the intent of W.S. 11-5-201. The rules and regulations were amended in October 1979.

**Problem**

Leafy spurge survey based on information received from the districts:

- a. Private land: 38,449 acres of leafy spurge (net acres);
- b. State land: 7,176 acres of leafy spurge (net acres);
- c. Federal land: 3,000 acres of leafy spurge (net acres);
- d. Total land: 48,618 - includes acres treated in 1978, 1979, 1980, 1981, and 1982.

**Implementation**

a. The district shall initiate a treatment program to treat at least one-third (1/3) of the reported acres of leafy spurge each fiscal year; plus initiate a maintenance program, providing funds are made available through W.S. 11 -5-111 or W. S. 11-5-201.

**Operational function**

The program is designed to contain and control approximately 48,168 acres of leafy spurge in a six-year time period, plus implementation of a continuous maintenance program after a six-year period.

**Projected program cost**

a. Projected overall cost; 48,168 acres @ \$216/acre = \$10,501,488 (includes private, state and federal land, for three treatments on each acre). First treatment, \$100; second treatment, \$58; third treatment, \$58.

### **Program effectiveness**

The program effectiveness is projected at 75% to 90%, which 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 infestation, regrowth, new seedling, etc.). Research studies by the University of Wyoming indicates program effectiveness on top growth is higher than projected.

Refer to the attached Wyoming Chemical Control Research manual for additional information.

### **Precautionary measures**

a. Many precautionary measures have to be undertaken in a program of this magnitude. One of the measures that has been taken is setting up an herbicide monitoring program which involves collecting water, soil and sediment samples, which are analyzed for herbicide contamination and residues.

The monitoring program was set up to:

- (1) Protect the weed program in the State of Wyoming.
- (2) Assure ourselves and the public we can safely apply herbicides and not contaminate our waterways.
- (3) Protect the environment.
- (4) Protect the herbicides and be assured they will be available in the future.
- (5) DEQ & Federal water quality standards.
- (6) Study soil residues of various herbicides.

The reasons are many, and we have only outlined a few that are high priority.

b. The monitoring program is being completed in cooperation with the U.S. Geological Survey, Wyoming Weed & Pest Control Districts, University of Wyoming and the Wyoming Department of Agriculture and is divided into three parts.

- (1) WDA/USGS; samples collected by USGS personnel and analyzed by USGS.
- (2) WDA/W&P; samples collected by district personnel and analyzed by the Wyoming Department of Agriculture State Laboratory.
- (3) Soil samples collected by University of Wyoming, and analyzed by the Wyoming Department of Agriculture State Laboratory.

The monitoring program for herbicide contamination was initiated in 1977. During this six-year period, the monitoring program did not indicate pesticides at a level in streams which would be harmful to the environment. Herbicide monitoring reports are available in the Wyoming Department of Agriculture Office. Refer to the attached USGS report.

### **Progress**

In 1977, the districts reported 26,020 acres on private and State lands. Federal lands were not included on the 1977 report. In 1979, the districts reported 34,700 acres and in 1981 the districts reported 48,618 acres (including federal, state and private). Increase is due to more intensive survey by the districts and public awareness since the law was en-

acted in 1978. In other words, we had some unknown areas that were infested. The difference between the two figures is not to be misconstrued that 26,020 acres have spread to 48,618 acres in six years. The districts have already adjusted their program to be synchronized with the reported acres.

629 cooperators were involved in treating 18,225 acres and re-treating 2,406 acres in 1978 and 79.

629 cooperators were involved in treating 11,112 acres and re-treating 11,965 acres in 1980.

647 cooperators were involved in treating 6,630 acres and re-treating 14,787 acres in 1981.

678 cooperators were involved in treating 7,483 and re-treating 16,624 acres in 1982.

Cooperators include private, state and federal landowners.

### **Problems encountered**

1. Adopting rules and regulations that would allow the districts to carry out the program based on three phases of operations in setting up the program.
  - a. District carrying out the program under provisions of Weed and Pest Control Act of 1973 (which is referred to as the 1st mill levy).
  - b. District carrying out the program under Leafy Spurge Control Act of 1978 using only the additional mill levy (referred to as the 2nd mill).
  - c. District carrying out the intent of the program using the additional mill levy plus receiving funds appropriated by state legislatures.
2. It appears with the rules and regulations adopted in 1978 and amended in 1979, it has solved the problem on how each district operates within the three phases.
3. Problems with root-shoot control correlation are discussed in the attached Wyoming Chemical Control Research Manual.
4. Program costs continue to accelerate due to increased costs for herbicides, equipment, labor, gasoline, etc.

### **Anticipated problems**

1. Landowners who may be uncooperative, which some districts may have to resort to the penalty provision pursuant to W.S. 11-5-201.
2. Lack of continued federal funding will be very detrimental to the leafy spurge program and all weed control programs.
3. Insufficient federal funding to carry out program on federal land.

### **Program costs**

Refer to the attached Leafy Spurge Program Summary.

### **S.E.C. conclusion and summary**

1. That the Legislature continues the additional mill levy authorized by W.S. 11-5-201 beyond July 1984.

2. That the Legislature continues the penalty provision of the Leafy Spurge Act beyond July 1984, W.S. 11-5-201.
3. Three districts received State-appropriated funds under W.S. 11-5-201 levying the full additional mill. Four districts levied a portion or all of the additional mill. The remaining districts carried out the program under W.S. 11-5-111 during the 1983-84 biennium.
4. In conclusion; since enactment of the Leafy Spurge Act of 1978 and with S.E.C. conclusion over the past three years, there is evidence of excellent activity in some counties; however, more concentrated effort is essential in some counties where better activity of support is needed.

## References

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