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2001 Spurgefest II Symposium Medora, North Dakota June 19, 2001

Forward/Program

In 1997 The Ecological Area-wide Management (TEAM) Leafy Spurge program became a reality. The program was funded as part of the USDA-ARS Area-wide Program and conducted cooperatively with the USDA-Animal and Plant Health Inspection Service (APHIS). The original concept of the program was to conduct demonstrations of integrated leafy spurge management strategies for state, federal and private land managers.

The TEAM Leafy Spurge (TLS) program has evolved substantially since its inception. Nineteen ninety seven saw the departure of the USDA-ARS Co-Principal Investigator, Dr. Paul Quimby Jr. and the subsequent assignment of Dr. Gerald L. Anderson as the ARS Co-Principal Investigator along with Dr. Lloyd Wendel of USDA-APHIS. The scope of the program was broadened to include research needed to complement the existing body of work, public relations and education became a major priority, and due to the abundance of biological control agents, the program distributed more than 40 million insects within the four state study region, as well as, three additional states (enough for more than 13,000 releases). TLS will distribute an additional 20 million insects within the original study area plus Iowa, Nebraska, Colorado, Idaho and two Canadian provinces if all goes as planned in 2001.

The papers presented in these proceedings represent the culmination of three to four years of research and demonstration, conducted in North Dakota, South Dakota, Wyoming and Montana. TLS will officially end 30 September 2001, however, a great deal of work remains. ARS will continue to provide administrative support for the next one to two years to ensure research and demonstration results are synthesized, published and provided to users in a usable format.

How will TLS be remembered? Hopefully we will be remembered for conducting a fair, comprehensive and coordinated approach to leafy spurge management. The intent of the program managers and the ad-hoc advisory committee continues to be heightening awareness of the problem leafy spurge poses and the various integrated pest management tools needed to effectively manage the weed. Program development was also designed to establish a new level of understanding and increase the participation of individuals in all sectors of society.

Two parting thoughts from the Principal Investigators:

- 1 . Given the state of our agricultural economy and current funding levels, leafy spurge and other invasive weeds are not a problem we can expect landowners and land managers to deal with effectively alone. This means that we all have to be proactive in supporting local weed control efforts in the private and public sector. Simply put, invasive weeds are everybody's problem regardless of how the situation came about. We will never legislate weeds away nor will we kill a single weed by pointing fingers at those who are "the problem," but we can work together to ensure sufficient resources are available to get the job done. This extends to federal and state lands as well. Under-funded and unfunded mandates have already stretched most agencies beyond their ability to comply with existing invasive weed mandates. We encourage you to remember that federal and state lands belong to all of us and if they are not being managed properly, then it is up to us to ensure they have the resources needed to meet the obligations that have been placed on them.
2. Integrated pest management (IPM) provides the only hope for successfully controlling invasive weeds and preventing the establishment of new problem species. But, IPM is more than a set of weed management tools. True IPM includes the integration of landowners, land managers, policy makers and agency decision makers. If you are on the front lines of the weed control battle and there aren't at least ten people tripping over their feet trying to provide you with support, then something is wrong. Don't stop the fight, simply start contacting your state and federal representatives and impress upon them that your income is as important to our nation and your state as it is to you and your family.

TLS has contributed to our understanding of the weed and how to control it. However, the success achieved during the program was only possible because of the contributions of countless individuals who have been fighting invasive weeds most of their careers, and in some cases all their lives. Thank you for your efforts and thanks to all the partners that participated in the program. TLS is your program and we hope that TLS under girded your efforts and promoted new management approaches that will be useful for years to come. The legacy of TLS is yet to be determined, but we hope it will be this – TLS made a difference – in controlling leafy spurge and in providing an effective example for future invasive weed programs.

Dr. Gerald L. Anderson
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Dr. Lloyd Wendel
UDSA, APHIS
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Program

Morning Session Moderator – Ernest “Del” Delfosse, acting laboratory director, USDA-ARS Northern Plains Agricultural Research Laboratory, Sidney, Montana.

- 8:00 a.m. Welcome – **Ollie Golberg**, Mayor of Medora.
- 8:05 a.m. Welcome – **Gerry Anderson**, TEAM Leafy Spurge co-principal investigator.
- 8:15 a.m. Operations Component Contributions to TEAM Leafy Spurge. **Robert D. Richard**, USDA, APHIS, PPQ Bozeman, Montana; **Chad W. Prosser**, USDA, ARS, Sidney, Montana; and **Connie O’Brien**, North Dakota State University, Belfield, North Dakota.
- 8:30 a.m. Leafy Spurge Bio-Control in the Little Missouri River Drainage. **Don Kirby**, North Dakota State University, Fargo, North Dakota.
- 8:50 a.m. Assessing Biological Control Agents for Area-Wide Control of Leafy Spurge with Foci in Montana and South Dakota. **Matthew S. Parker** and **Jack L. Butler**, Central Missouri State University, Warrensburg, Missouri.
- 9:10 a.m. TEAM Leafy Spurge Demonstration Assessment. **James S. Jacobs** and **Roger S. Sheley**, Montana State University, Bozeman, Montana.
- 9:30 a.m. Wyoming Assessment Project and Remote Sensing of Leafy Spurge. **Amy Parker Williams** and **David J. Kazmer**, University of Wyoming, Laramie, Wyoming.
- 9:50 a.m. Causes and Consequences of Female-Biased Sex Ratios in *Aphthona* Flea Beetles. **David J. Kazmer**, University of Wyoming, Laramie, Wyoming.
- 10:05 a.m. Break
- 10:20 a.m. Ecological Barriers for the Establishment and Population Increase of Flea Beetles on Leafy Spurge. **Robert Nowierski**, Montana State University, Bozeman, Montana; **David Kazmer**, University of Wyoming, Laramie, Wyoming; **David Horvath**, USDA, ARS, Fargo, North Dakota; and **Richard Hansen**, USDA, APHIS, PPQ, Montana State University, Bozeman, Montana.
- 10:40 a.m. The Utilization of *Oberea erythrocephala* as an Additional Bio-Control Agent on Leafy Spurge in the Little Missouri River Basin and in Southeast and North Central North Dakota. **Denise L. Olson** and **Donald Mundal**, North Dakota State University, Fargo, North Dakota.
- 11:00 a.m. Impact of Grasshopper Treatments on Established Populations of Biological Control Agents (*Aphthona* spp.) for Leafy Spurge. **R. Nelson Foster**, and **K. Chris Reuter**, USDA, APHIS, PPQ, Phoenix, Arizona; **Loren K. Winks** and **Terry E. Reule**, USDA, APHIS, PPQ, Bismarck, North Dakota; and **R.D. Richard**, USDA, APHIS, PPQ, Bozeman, Montana.

- 11:20 a.m. Nutritional Composition of Selected Invasive Species. **Kevin Sedivec**, North Dakota State University, Fargo, North Dakota; and **Chad Prosser**, USDA, ARS, Sidney, Montana.
- 11:40 a.m. TEAM Leafy Spurge Survey of Ranch Operators, Land Managers, and Local Decision Makers. **Nancy M. Hodur** and **Larry Leistritz**, North Dakota State University, Fargo, North Dakota.
- 12:00 p.m. Lunch
- Afternoon Session Moderator – **Gerry Anderson**, TEAM Leafy Spurge co-principal investigator.
- 1:00 P.M. Management Approach for Leafy Spurge Control. **Andrew Canham**, School and Public Lands, Pierre, South Dakota; **Dennis Mann**, Game Fish and Parks, Rapid City, South Dakota; **Jerry Moller**, Bureau of Land Management, Belle Fourche, South Dakota; and **Larry Nelson**, Redig, South Dakota.
- 1:20 p.m. Development of a GIS Database for the TEAM Leafy Spurge Project. **Steve Hager**, USDI, Medora, North Dakota.
- 1:40 p.m. Scale Dependent Spread Predictions of Leafy Spurge Using Multi-elevation Remote Sensing and GIS Collateral Data. **Karl Brown**, **Ralph Root** and **Raymond Kokaly**, USGS, Denver, Colorado; **Gerry Anderson**, USDA, Sidney, Montana; **Steve Hager**, USDI, Medora, North Dakota; **Bob Nowierski**, Montana State University, Bozeman, Montana; and **Ed Holroyd**, USGS, Denver, Colorado.
- 2:00 p.m. Detection of Leafy Spurge Infestations Through Imaging Spectroscopy Using the Compact Airborne Spectrographic Imager. **Ralph Root**, USGS Rocky Mountain Mapping Center, Denver, Colorado; **Ray Kokaly** USGS, Denver, Colorado; **Karl Brown**, USGS, Denver, Colorado; **Gerry Anderson**, USDA, Sidney, Montana; and **Steve Hager**, USDI, Medora, North Dakota.
- 2:20 p.m. Evaluation of Diflufenzopyr Applied with Quinclorac and Dicamba for Leafy Spurge Control. **Kenneth J. Deibert** and **Rodney G. Lym**, North Dakota State University, Fargo, North Dakota.
- 2:40 p.m. Herbicide Evaluation For Leafy Spurge in South Dakota. **Leon J. Wrage** and **Darrell L. Deneke**, South Dakota State University, Brookings, South Dakota.
- 3:00 p.m. Break
- 3:15 p.m. Effects of Leafy Spurge Control on the Western Prairie Fringed Orchid. **Ann M. Erickson** and **Rodney G. Lym**, North Dakota State University, Fargo, North Dakota.
- 3:35 p.m. Effects of Multi-Species Grazing and Bio-Control on Leafy Spurge Infested Rangeland in Golden Valley County, North Dakota. **Luke W. Samuel**, and **Kevin K. Sedivec**, North Dakota State University, Fargo, North Dakota; **Timothy C. Faller** and **Jack D. Dahl**, North Dakota State University, Hettinger, North Dakota.

- 3:55 p.m. Investigations on Potential Ways To Improve Leafy Spurge Control By Live-stock. **Scott L. Kronberg**, USDA, ARS, Mandan, North Dakota.
- 4:15 p.m. Economics of Using Sheep to Control Leafy Spurge. **Dean A. Bangsund**, North Dakota State University, Fargo, North Dakota; **Dan Nudell**, North Dakota State University, Hettinger, North Dakota; and **Larry Leistritz**, North Dakota State University, Fargo, North Dakota.
- 4:35 p.m. Feasibility of Using a Sheep Cooperative to Control Leafy Spurge. **Dan J. Nudell**, North Dakota State University, Hettinger, North Dakota; **Dean A. Bangsund** and **Larry Leistritz**, North Dakota State University, Fargo, North Dakota; and **Timothy Faller**, North Dakota State University, Hettinger, North Dakota.
- 4:55 p.m. An Ecologically Based Decision Support System for Managing Leafy Spurge Infested Rangeland. **Roger L. Sheley**, **Matthew J. Rinella**, and **James S. Jacobs**, Montana State University, Bozeman, Montana.
- 5:15 p.m. A Most Troublesome Weed: What Has Been Done, What Else Can We Do? **Michael E. Foley**, **James V. Anderson**, **Wun S. Chao**, and **David P. Horvath**, USDA, ARS, Fargo, North Dakota.
- 5:30 p.m. Closing comments

Posters:

Genomics Approach to Investigate Growth and Development of Root Buds in Leafy Spurge. **Wun S. Chao**, **James V. Anderson**, and **David P. Horvath**, USDA, ARS, Fargo, North Dakota.

Three-Way Herbicide Mixture Increased Leafy Spurge Control. **Katheryn M. Christianson** and **Rodney G. Lym**, North Dakota State University, Fargo, North Dakota.

Effects of Leafy Spurge Thinning on Establishment and Population Increase of *Aphthona* Flea Beetles. **David J. Kazmer**, University of Wyoming, Laramie, Wyoming; **Chad Prosser** and **Gerry Anderson**, USDA, ARS, Sidney, Montana.