

EXHIBIT 2
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SB 300

HOUSE COMMITTEE ON AGRICULTURE

March 24, 2009 Hearing on Senate Bill 300

Testimony of Jeff Farkell, Fertilizer Advisory Committee member

Mr. Chairman, members of the committee, for the record my name is Jeff Farkell and I work for Centrol, a crop consulting firm in Brady serving growers in North Central Montana. I am testifying today as a Certified Crop Adviser and a member of the Fertilizer Advisory Committee in support Senate Bill 300.

The Fertilizer Advisory Committee recommended to MSU in 1992 that a greater effort be made to get information out to growers and others about the results of fertilizer research being done with these funds. As a result, Dr. Jeff Jacobsen developed "Fertilizer Facts" which have been published since September 1992 and have been valuable to inform growers and others like me who advise growers in crop production decisions. The latest were published in January.

I believe the Fertilizer Advisory Committee is functioning well to assure research meets the needs of Montana growers and urge you to allow the increase. It requires no general fund money. I do have a list of research projects that have been done over the past several years. If you are interested, I will provide a copy so you can see the projects that have been funded and their applicability.

I am providing the committee a list of potential fertilizer research projects which could be done if Senate Bill 300 becomes law. It is attached to my written testimony.

HB 300 does provide an overdue increase in the fertilizer check off to support more fertilizer research. The amount has not increased in law since the inception of the program in 1971. Fertilizer sales have increased some but inflation has also eroded the amount going into research.

Why do we need more research dollars? Besides the erosion caused by inflation, we also have seen less federal agricultural research dollars going into production agriculture. This bill is really the only way to gain more dollars for fertilizer research needed in production agriculture today. Research is needed both for maximum economic benefits of fertilizer but also to help assure efficiency in use to the benefit of the environment.

I ask you to support Senate Bill 300. Thank you for the opportunity to testify before your committee and I will try to answer any questions you may have. If I can't answer them today, I will provide the information before you take executive action on this bill.

Thank you. Mr. Chairman.

Potential Fertilizer Research and Education Programs

- ✓ Break-out of CRP and nutrient management practices.
- ✓ Correlation of micronutrient response to Montana crops.
- ✓ Developing calibration techniques to map wheat nitrogen status using digital aerial photographs.
- ✓ Development of on-the-go grain protein sensing technology to develop nutrient management zones for precision nitrogen fertilization.
- ✓ Effect of phosphorus fertilization on yield under dry conditions.
- ✓ Enhanced efficiency fertilizers.
- ✓ Evaluate fertilizer use on seeded dryland perennial forages to improve production efficiency.
- ✓ Evaluations of rapid in-field diagnostic tools for nutrient management.
- ✓ Evaluations of new fertilizer and soil amendment materials.
- ✓ Farm-scale knowledge of fertilizer N offset opportunities via biological N fixation by legume crops – soil, climatic and management considerations.
- ✓ Fertility management for barley forage.
- ✓ Fertilizer impacts on soil quality and health.
- ✓ Fertilizer interactions with pest management practices.
- ✓ Fertilizer N losses as ammonia volatilization following broadcast applications of N fertilizer.
- ✓ Fertilizer supplements to reduce wheat stem sawfly losses.
- ✓ Greenhouse gas emissions associated with application of nitrogen to Montana's dryland and irrigated crops.
- ✓ Heavy metals, fertilizers, and plant uptake.
- ✓ Improved laboratory analytical methods for Montana crops and soils.
- ✓ Integration of fertilizer and irrigation strategies to offset water restrictions due to threatened trout recovery projects.
- ✓ Integration of soil and plant analysis into nutrient management practices.

- ✓ Long-term impacts of fertilizer on soil biological, chemical and physical properties.
- ✓ Nutrient-disease interactions.
- ✓ Nutrient-insect interactions.
- ✓ Nutrient management impacts on soil C and N storage.
- ✓ Nutrient management practices for grass seed production.
- ✓ Nutrient recommendations following alternate crops.
- ✓ Nutrient stratification and availability in no-till cropping system.
- ✓ Organic matter mineralization impacts on nitrogen recommendations.
- ✓ Over-winter nitrogen mineralization study (A comparison of late summer and early fall sampling strategies).
- ✓ Placement, timing, and rate for optimum nutrient management.
- ✓ Plant availability of micronutrient materials.
- ✓ Precision farming with fertilizer inputs.
- ✓ Precision nutrient management (Evaluation of worth of zone fertilization compared to uniform fertilization)
- ✓ Predicting canola spring wheat responses to sulfur fertilization.
- ✓ Reduced and no-till impacts on nutrient management.
- ✓ Routine fertility response to new crops, e.g., pulse, oilseed.
- ✓ Safflower response to sulfur fertilization.
- ✓ Soil test laboratory comparisons.
- ✓ Varietal response and crop quality impacts from applied nutrients.
- ✓ Verifying fertilizer economic models.
- ✓ Yield, protein, and growth responses to N and water in four winter wheat cultivars.