South Dakota Wheat Commission
Final Report for 2011 – 2012 Research:
Weed Management Research and Publications

Project Title: Weed Management Research and Publications for Small Grains in South Dakota

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Project summary:

Studies completed and data reported

Foxtail barley control: We conducted a field trial near Henry, SD and tested seedlings for ALS resistance. Since no selective herbicide worked well, burndown applications may be necessary. The test for resistance indicated that foxtail barley seedlings were susceptible to ALS-herbicides, so resistance is not likely.

Clearfield programs for downy brome control: We conducted a couple trials in Stanley County to evaluate the efficacy of Beyond for downy brome (cheatgrass) control, crop tolerance associated with added surfactant levels, and two pass programs. Results indicated that Beyond was as effective on downy brome as competitive products (PowerFlex, Olympus, and Maverick). Also, increasing surfactant concentrations did not harm wheat which demonstrates how the ClearField 2 varieties are more tolerant to Beyond.

Downy brome emergence model: Downy brome emergence was counted on a weekly basis for 5 weeks at the field station in Highmore to generate a model that can predict downy brome emergence based on temperature and moisture.
Spring wheat tolerance to glyphosate in the soil: A field trial conducted at the Brookings Agronomy farm that glyphosate in the soil could reduce wheat growth if glyphosate is present at excessively high rates. More detailed research will be conducted in 2012 to identify exactly what levels may harm wheat.

Wheat as a rotation option for glyphosate resistant kochia control: A study was established at the Brookings Agronomy farm to measure the effect wheat and other crop species on kochia growth reduction in order to develop population dynamics models that may enable us to anticipate how much control is necessary to deplete kochia populations in a field.

Publications: We printed 1,000 copies of "Weed Control in Small Grains: 2012" and distributed them at meetings and regional offices. Publications and research results are also available on the extension web site at http://www.sdstate.edu/ps/extension/weed-mgmt/weed-mgmt-small-grains.cfm. Results were also discussed at meetings to approximately 2,000 growers, industry reps, crop consultants, and pesticide applicators.

We developed and printed 3000 copies of 2013 South Dakota Crop Protection Guide in Wheat which was a different format from the previous herbicide guides. This Extension guide also included insect and disease control options. They are available on the SDSU Extension iGrow site and were distributed at meetings and tours as well as being available at the Regional Extension Centers.

Thank you. We greatly appreciate the continued support of the SD Wheat Commission. This support enables us to quickly respond to growers needs and provide practical information to support wheat production in SD. .