

Wheat Disease Research and Education

South Dakota Wheat Commission

Reporting period: July 1, 2013 – August 29, 2014

Project investigators:

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Research Summary:

Wheat disease education was made available to producers through private pesticide applicator trainings, commercial applicator trainings, crops clinics, Wheat Walks, SDSU IPM Shortcourse, SDSU IPM Field School, iGrow articles, iGrow Radio spots, news releases, weekly news columns, and other educational materials as handouts. Education was also provided to high school students through educational displays and presentations at Women in Science and Sanford Promise Day events. Assistance was provided to the WSMV "Identification of the Green Bridge" project, headed by B. Hadi, in identifying locations from which to collect samples, and the collection of the samples. Plots were also established and maintained for the "Wheat Health Management" project, in which various levels, sources, application methods and rates of chloride are being explored with the intent of maintaining wheat health, better managing root diseases and minimizing the need for foliar fungicides.

Introduction:

Indicate the purpose and objectives of the project. Note any changes that have arisen from that of the original proposal submitted.

- The Wheat Walk Tours provided an opportunity for producers to receive information on identifying and managing various wheat diseases, weeds, and insects, proper fertility practices and other agronomic information. The benefits of crop rotations, cover crops, and using resistant varieties were stressed. The Wheat Walks allowed producers to interact with Plant Pathology, Weed, Entomology, Soil Fertility, and Agronomy Field Specialists and/or State Specialists, discuss their concerns and get their questions answered in person. Handout material was provided to attendees for further reference.*
- Assist with general and specific surveys of wheat diseases occurring over a representative portion of South Dakota in conjunction with other researchers. Information is needed on the occurrence of various wheat diseases in South Dakota to help justify both research and educational efforts. Periodic visits to wheat fields were made to document wheat diseases that are present in the field and collect samples for proper diagnosis through laboratory analysis.*

Description of Accomplishments:

"Wheat Walks" were held at four locations, with approximately 35 producers in attendance. Each of the major topic areas of wheat production were represented, including: agronomy, entomology, soil fertility, plant pathology, and weed control. Also present were representatives of the SD Wheat Commission and SD Wheat Inc. A specialist from each area gave a brief presentation on the major issues regarding wheat production in their topic area, and time was allowed for producers to interact with the specialists and ask questions. Sponsorships were secured from area agribusinesses to assist with travel expenses, refreshments and publication costs, removing the need to charge producers to attend.

Research results from the WSMV Green Bridge project will be reported by B. Hadi. The Wheat Health Management project indicated minimal yield responses to applied chloride fertilizer, but significant increases in chloride levels in plant tissue.

A field survey was conducted in the vicinity of selected South Dakota Automatic Weather Stations to document the incidence and severity of Fusarium Head Blight (FHB or scab) and leaf spotting diseases.

When ergot emerged as a widespread problem in 2014, the incidence of the disease in two of the spring wheat CPT trial locations were rated and documented.

Projections:

The Wheat Walks provided an excellent opportunity for producers to get up to date, research based information and interact directly with SDSU Extension Specialists. These efforts will be evaluated to determine if they should be continued. The Wheat Health Management project is also planned to be continued in hopes of evaluating the effectiveness in managing root and crown diseases with chloride fertility. Selected winter wheat varieties were planted in a plot, located in a spring wheat field that was infected with ergot in the 2014 growing season. Plans are to rate the incidence of ergot among the varieties in 2015.

Publications/Data:

No new publications were developed during this project time period.