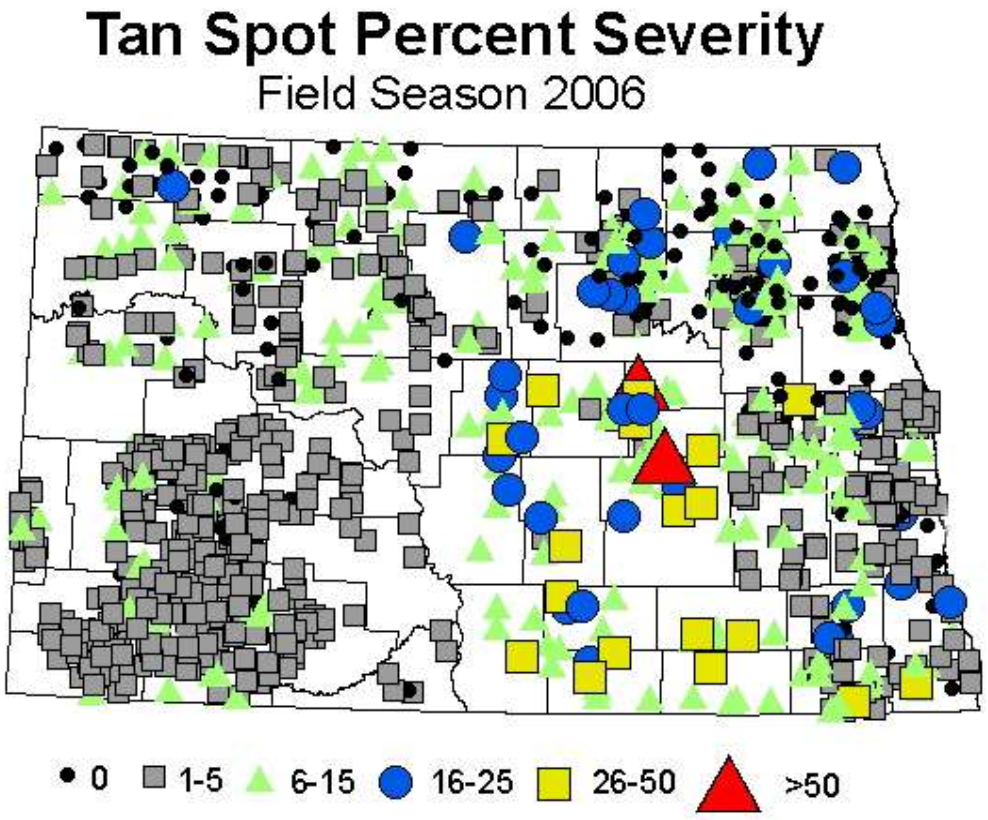
Grain and Oilseed Crop Field Surveys in South-Central North Dakota

Greg Endres, Brandt Lemer, Marcia McMullen, Carl Bradley, Jan Knodel, and Duane Berglund

During the 2006 growing season, field surveys were conducted in North Dakota by the NDSU Extension Service to identify pest presence and agronomic production factors in small grain, corn and oilseed crops. Survey coordinators were Drs. Marcia McMullen and Carl Bradley, extension plant pathologists, and Dr. Jan Knodel, extension entomologist. Carrington Research Extension Center staff members Brandt Lemer, summer IPM crop scout, and Greg Endres, area extension specialist/cropping systems conducted the surveys in 337 fields in 12 south-central counties (Burleigh, Dickey, Eddy, Emmons, Foster, Kidder, LaMoure, Logan, McIntosh, Sheridan, Stutsman, and Wells). Use of the survey data includes grower and ag industry education, and support for labeling of crop protection products.

The **small grain** survey was conducted in south-central North Dakota from early June to early August primarily for leaf and head diseases. The 133 surveyed fields included 110 wheat and 23 barley fields. Diseases included in the survey were bacterial leaf blight, barley yellow dwarf, black chaff, Cephalasporum stripe, dwarf bunt, ergot, rust (leaf, stem, and stripe), scab (Fusarium head blight), Septoria, smut (flag and loose), spot blotch, tan spot, and wheat streak mosaic. As an example of generated data, the figure below illustrates the season's summary of tan spot percent severity across North Dakota. The survey insect list included aphids, cereal leaf beetle, grasshoppers, and thrips (barley).

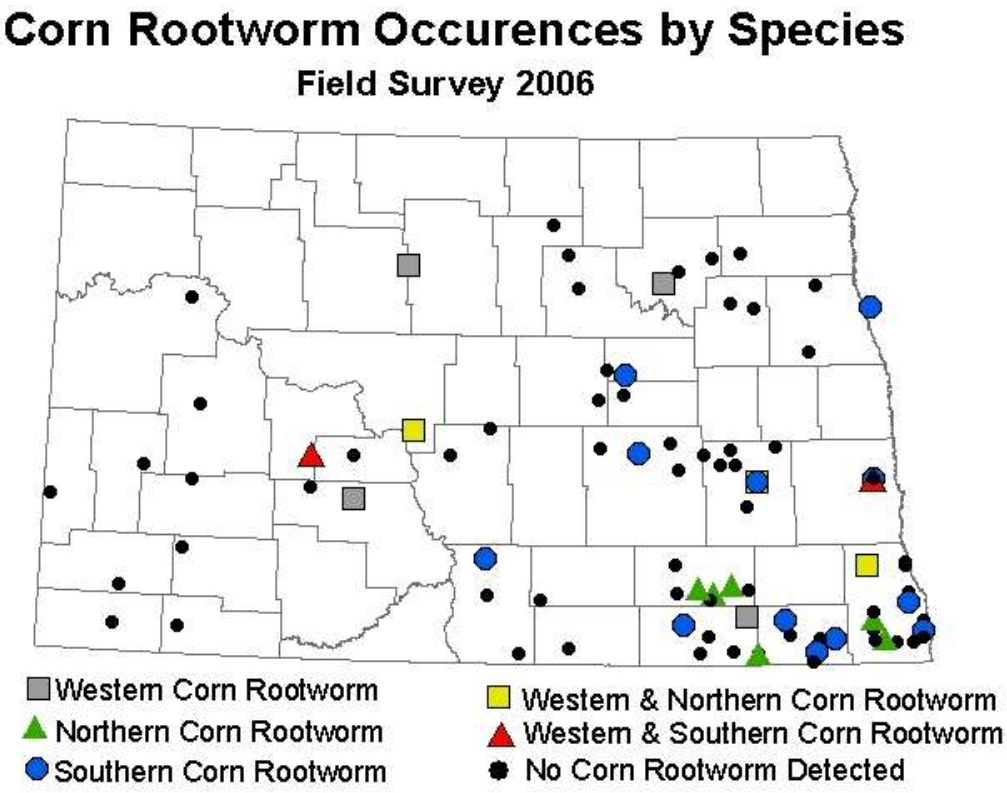


The **canola** survey was conducted during August 1-7 in eight swathed fields in Sheridan and Wells counties. The fields were inspected for the presence of Sclerotinia stem rot (white mold), blackleg, aster yellows, and Alternaria. White mold was detected in 50% surveyed fields, but field incidence was low (2-6% of plants infected). In addition, the fields were surveyed for flea beetles and grasshoppers.

The **soybean** survey was conducted in 101 fields for the Asian soybean aphid and soybean rust. Soybean aphids were commonly found throughout the region. It is estimated that about 60% of soybean fields in the state required treatment for this pest.

The **sunflower** survey conducted in south-central North Dakota included 67 fields visited during late June to mid-August to inspect plants for downy mildew, sunflower beetle, and seed weevil. Downy mildew was very low due to the dry conditions. Beetle and seed weevil incidence was also low.

Corn traps (one yellow sticky and one kairomone per field) were placed in 28 fields during mid-July and collected by early August to detect the presence of rootworms. Low levels of Western, Northern and Southern rootworms were collected in the region (see map below).



Also, a **sunflower** field survey was conducted in September by the National Sunflower Association in cooperation with the NDSU Extension Service. Various data were recorded including plant population, row spacing, tillage system, estimated yield, and presence/symptoms of weeds, insects, disease and birds. Survey coordinator was Dr. Duane Berglund, extension agronomist. Dr. Larry Charlet, ARS sunflower entomologist, Theresa Gross, ARS sunflower entomology technician, and Greg Endres participated in the program by surveying nine fields in Foster, Eddy, Wells and Sheridan counties. In these counties, average plant population was 16,880 plants/acre (range of 8000 to 23,500) and average

yield was estimated at 1265 lb/acre (range of 710 to 1680). The majority of surveyed fields were reduced till (56%) and in 30-inch rows (67%). The most common yield-limiting factor (33% of fields) was drought. Disease incidence, including Sclerotinia, and insect damage generally was low. Seed loss from blackbird feeding was noted in 44% of surveyed fields.

Maps displaying summaries of survey results by crop and pest are available at the following website: http://www.ag.ndsu.nodak.edu/aginfo/ndipm/. Survey details may be obtained by contacting the Carrington Center.