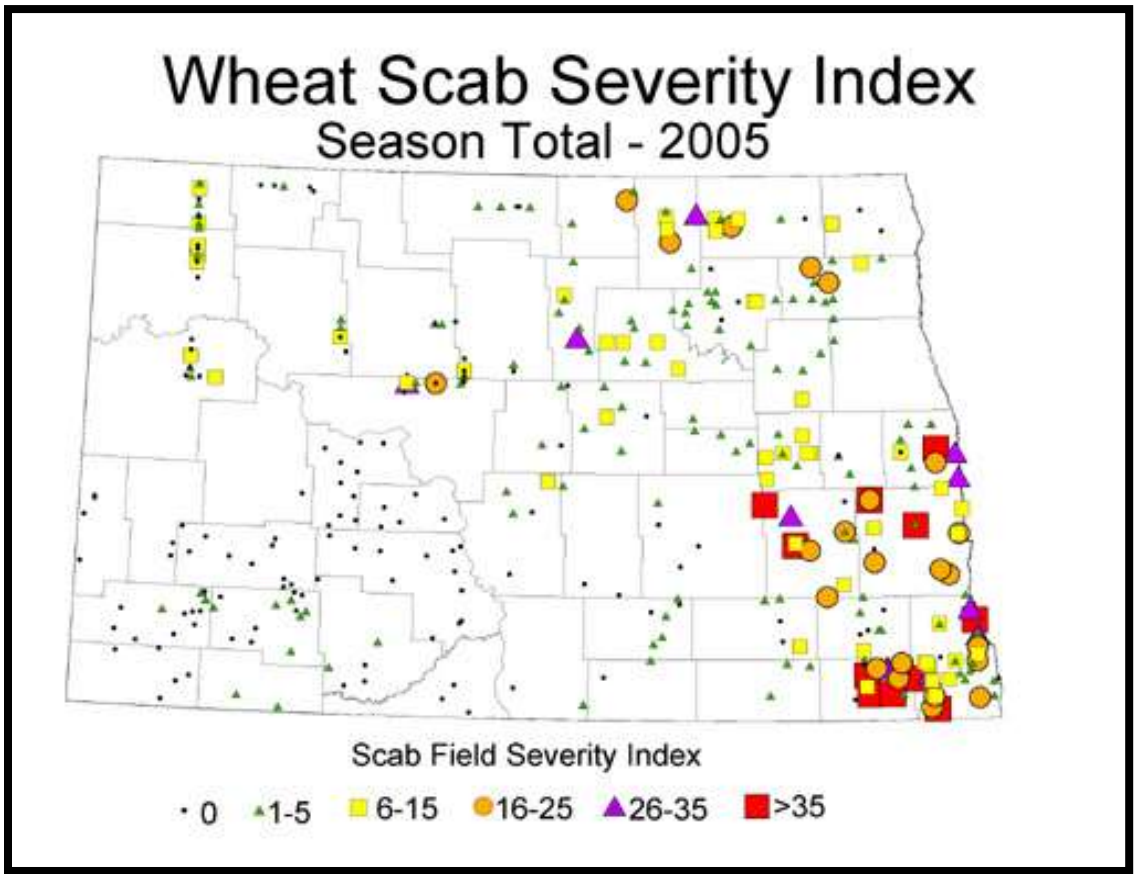
Small Grain and Oilseed Crop Field Surveys in South-Central North Dakota

Greg Endres, Clara Presser, Marcia McMullen, Carl Bradley, Jan Knodel, and Duane Berglund

During the 2005 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 and oilseed crops. Survey coordinators were Drs. Marcia McMullen and Carl Bradley, extension plant pathologists, and Jan Knodel, extension entomologist. Carrington Research Extension Center staff members Clara Presser, summer IPM crop scout, and Greg Endres, area extension specialist/cropping systems, conducted the surveys in 370 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 228 surveyed fields included 195 wheat and 33 barley fields. Diseases included in the survey were bacterial leaf blight, barley yellow dwarf mosaic virus, 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 scab severity across North Dakota. The survey insect list included aphids, cereal leaf beetle, grasshoppers, and thrips (barley).



The **canola** survey was conducted from July 27 to August 5 in 15 swathed fields in Burleigh, Eddy, Foster, Sheridan, Stutsman, 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 6 (40%) surveyed fields, but field incidence was low (2-8% of plants infected). Blackleg was found in 4 (27%) of the surveyed fields, but with low plant incidence. In addition, the fields were surveyed for flea beetles and grasshoppers.

Sixty-three **soybean** fields were surveyed for soybean aphid and diseases (root, stem and foliar) including soybean rust. Soybean aphids were found in all 12 counties for the first time in 2005, but at non-economic levels. Soybean rust did not occur in North Dakota.

The **sunflower** survey conducted in south-central North Dakota included 64 fields visited during late June to mid-August to inspect plants for downy mildew, sunflower beetle, and seed weevil. Downy mildew was found in 46 (72%) surveyed fields with incidence ranging from 1 to 22.5%.

A **sunflower** field survey was also 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 of weeds, insects, or diseases. Survey coordinator was Dr. Duane Berglund. Greg Endres, Richard Maine (Wells County extension agent), and Wendy Bengochea (Foster County extension agent) participated in the program by surveying 11 fields in Foster, Eddy, and Pierce counties. In these counties, average plant population was 17,500 plants/acre (range of 9,500 to 23,300) and average yield was estimated at 1880 lbs./acre (range of 1110 to 2550). The majority of surveyed fields were in 30-inch rows (73%) and conventional till (82%). The most common yield-limiting factors were plant population and bird damage. Sclerotinia incidence was low.

Dr. Marcia McMullen and Richard Maine conduct sunflower surveys.

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