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

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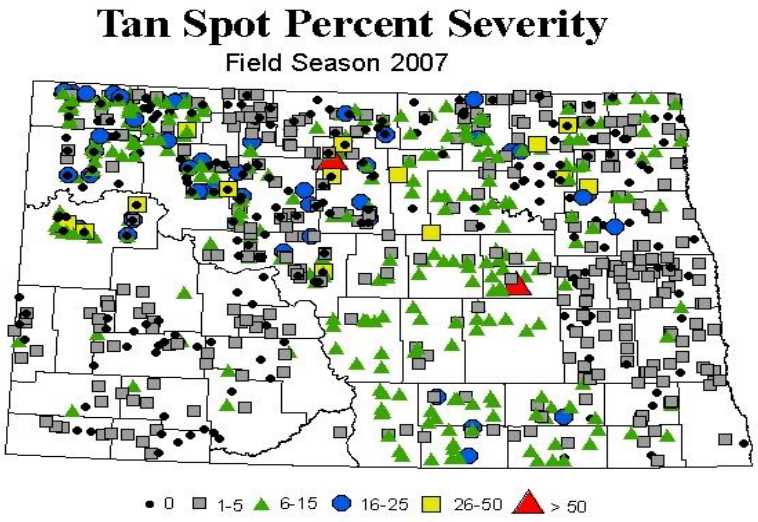
During the 2007 growing season, field surveys were conducted in North Dakota by the NDSU Extension Service to identify pest presence and agronomic production factors in small grain and oilseed crops. Survey coordinators were Drs. Marcia McMullen and Sam Markell, extension plant pathologists, Dr. Jan Knodel, extension entomologist, and Greg Endres, area extension specialist/cropping systems. Brandt Lemer, summer IPM crop scout at the Carrington Research Extension Center, conducted the survey in 348 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 **wheat and barley** survey was conducted in 138 south-central North Dakota fields from late May to mid July, primarily for leaf and head diseases. 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. Insects were also surveyed including aphids, cereal leaf beetle, grasshoppers, Hessian fly (using pheromone traps), and thrips (barley). As an example of generated data, the figure below illustrates the season's summary of tan spot percent severity across North Dakota. Fusarium head blight (scab) generally occurred at low levels throughout our region.



Pheromone traps were placed in Foster, Sheridan, and Wells counties during June and July to detect the presence of Bertha armyworms and diamondback moth in **canola.** The field survey was conducted from July 30 to August 14 in eight swathed canola fields in Foster, Sheridan, Stutsman, and Wells counties. The fields were inspected for the presence of Sclerotinia stem rot (white mold), blackleg, aster yellows, and Alternaria. Blackleg was found in 75% of fields and white mold in 38% of fields, but field incidence was low (0 to 12%). In addition, the fields were surveyed for flea beetles and grasshoppers.

The **soybean** survey was conducted in 105 fields for the Asian soybean aphid and soybean rust. Few fields containing aphids were found in the south-central region.

Banded **sunflower** moth pheromone traps were located in Eddy, Foster, Sheridan, Stutsman, and Wells counties during July to monitor the emergence and presence of the insect. The sunflower field survey was conducted in 68 south-central North Dakota fields from mid July to mid August to inspect

plants for downy mildew and sunflower beetle. Downy mildew and sunflower beetle incidence was very low.
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, emeritus extension agronomist. Greg Endres; Tim Becker, Eddy County extension agent; Richard Maine, Wells County extension agent; and Darcy Uhrich, Cargill farmer origination merchant, participated in the North Dakota program by surveying 13 fields (11 oil and 2 confection) in Foster, Eddy, Sheridan, Stutsman, and Wells counties on September 19 and 21. In these counties, average plant population was 15, 200 plants/acre (range of 12,000 to 20,000) and average yield was estimated at 2150 lbs./acre (range of 1320 to 2867). The majority of surveyed fields were reduced- or no-till (85%) and all were seeded in 30-inch rows. The most common yield-limiting factor was disease (46% of fields) followed by reduced plant population (31%). The most common diseases present included phoma, phomopsis, and sclerotinia. Sclerotinia wilt was found in 69% of fields with incidence ranging from 2 to 20%; middle stalk rot was found in 15% of fields with incidence at 2%; and head rot was found in 54% of fields with incidence ranging from 2 to 32%. Seed loss from blackbird feeding was noted in 54% of surveyed fields, with estimated loss per field ranging from 1 to 11% during the survey period.

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.