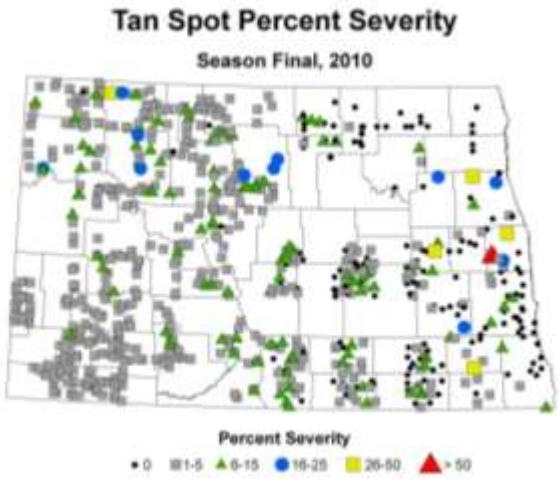
Small Grain and Oilseed Crop Field Surveys in South-Central North Dakota

Greg Endres and Rick Glatt

During the 2010 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. State survey coordinators were Marcia McMullen and Sam Markell, extension plant pathologists, and Jan Knodel, extension entomologist, and regional coordinator was Greg Endres, extension area agronomist. Rick Glatt, summer crop scout at the Carrington Research Extension Center, conducted the survey in 347 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.

Maps displaying summaries of survey results by crop and pest are available at the following website: http://www.ag.ndsu.nodak.edu/aginfo/ndipm/. An example listed below is the season's wheat tan spot severity across the state. Also, a brief summary of small grain disease can be found at the following website: www.ag.ndsu.nodak.edu/aginfo/entomology/ndsucpr/Years/2010/August/26/ppath.htm#NDSU .



The small grain survey was conducted in 203 south-central ND **spring and winter wheat** (181) and **barley** (22) fields during early June through early August, primarily for leaf and head diseases. Diseases included in the survey were bacterial leaf blight, barley yellow dwarf, black chaff, 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, wheat stem maggots, grasshoppers, and barley thrips. While most diseases were present, severity was low including Fusarium head blight (scab) and the leaf spots.

The **canola** field survey was conducted in 15 fields for flea beetles. Pheromone traps were placed in Foster County during mid-June through July to detect the presence of Bertha armyworms and diamondback moth in **canola.** Both insects were found at low levels.

The **soybean** survey was conducted in 73 fields for soybean aphid, bean leaf beetle and grasshoppers. Seven fields (10%) contained aphids but plant counts did not average greater than 20 aphids/plant in any field.

The **sunflower** field survey was conducted in 56 south-central North Dakota fields during early July through mid-August to inspect plants for downy mildew, rust and verticillium wilt; and sunflower beetle and grasshoppers. Downy mildew was found in four fields (7%). Banded sunflower moth, *Cochylis arthuri* and sunflower moth pheromone traps were located in Foster County during June through late August to monitor the emergence and presence of the insects. Trap counts for the banded sunflower moth ranged from 80 to 285 per week during mid-July to mid-August.

Also, a fall **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 or damage of weeds, insects, disease and birds. Survey coordinator was Hans Kandel, extension agronomist. Greg Endres; Michael Wunsch, CREC plant pathologist; Tim Becker, Eddy County extension agent; Jason Goltz, Kidder County extension agent; and Emily Kline, Sheridan County extension agent, surveyed 11 fields in Eddy, Foster, Griggs, Kidder, Sheridan, and Wells counties September 8-9, 16-17 and 24. Across these fields, average seed yield was estimated at 1995 lb/ac (range of 1160 to 3170 lb/ac). The majority of surveyed fields were conventional till (55%) and planted in 30-inch rows (55%). Low plant population was the most consistent yield-limiting factor among fields. The most common diseases present included phoma, phomopsis, rust, and sclerotinia. Phoma was found in all fields while phomopsis was found in six fields (55%). Sclerotinia was found in six fields (55%), with one field having 42 percent of plants with middle stalk rot. Leaf rust was found in 10 fields (91%). Bird damage was found in seven fields (64%).

Details from the field surveys may be obtained by contacting the Carrington Center.