2013 Crop Surveys in South-Central North Dakota

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During the 2013 growing season, an integrated pest management (IPM) field survey was conducted in North Dakota by the NDSU Extension Service to identify crop pest presence and agronomic production factors in small grain, corn, soybean, dry bean, and sunflower. Use of the survey data includes grower and ag industry education, reference for research projects, and support for exporting North Dakota crops.

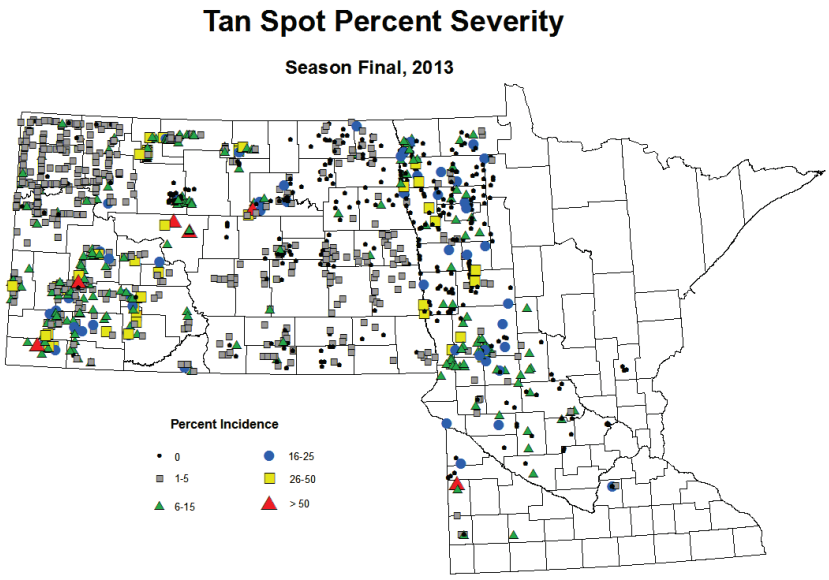
State IPM survey coordinators were Sam Markell, extension plant pathologist, and Jan Knodel, extension entomologist, and south-central region coordinator was Greg Endres, extension area agronomist. Kyle Aasand, crop scout based at the Carrington Research Extension Center (CREC), conducted the survey in 286 fields in 11 south-central counties: Burleigh, Dickey, Eddy, Emmons, Foster, Kidder, LaMoure, Logan, McIntosh, Stutsman, and Wells.

The south-central small grain survey was conducted in 124 **spring and winter wheat,** and 31 **barley** fields during early June through July, primarily for leaf and head diseases. Diseases included in the survey were bacterial leaf blight, barley yellow dwarf virus, 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 virus. In wheat, tan spot was the most common fungal disease while scab was present in only 5 percent of fields. Insects surveyed in small grain were aphids, barley thrips, cereal leaf beetle, grasshoppers, and wheat stem maggots and sawfly. Also, insect traps were placed in four wheat fields for an exotic insect and soil samples for nematodes were collected from 11 wheat fields (one per county) for the North Dakota Department of Agriculture. In addition, pheromone traps were in CREC **corn** fields to monitor for the presence of European corn borer and corn rootworms.

The **soybean** survey was conducted in 107 fields for soybean aphid, bean leaf beetle, spider mites and grasshoppers. Soybean aphids were found in less than half the scouted fields (43%) and densities were well below the economic threshold (generally <20 aphids/plant). Thirteen **dry bean** fields were scouted from mid-July to mid-August for insects and diseases including anthracnose, leaf rust and bacteria blight. All fields were negative for the diseases.

The survey included 21 **sunflower** fields during early July through mid-August to inspect plants for grasshoppers, downy mildew, leaf rust, and *Verticillium* wilt. Downy mildew was found in about one-half (48%) of fields but at low levels. Banded sunflower moth, *Cochylis arthuri* and sunflower moth pheromone traps were located at the CREC during early July through mid-August to monitor the emergence and presence of the insects.

Maps displaying summaries of the state survey results by crop and pest are available at the following website: www.ag.ndsu.nodak.edu/aginfo/ndipm/IPMSurveyArchives/ArchiveIPMsurvey.htm.
An example displayed below is the season's summary of tan spot severity in wheat.



Also, a fall **sunflower** field survey was conducted in September and October by the National Sunflower Association in cooperation with the NDSU Extension Service. Data recorded included plant population, row spacing, tillage system, seed yield, and presence of or damage by weeds, insects, disease and birds. In south-central North Dakota, a total of 11 fields (7 oilseed and 4 confection) were surveyed in Eddy, Foster, Kidder, Logan, McIntosh, Sheridan, Stutsman and Wells counties by Greg Endres and the following extension agents: Tim Becker, Sarah Crimmins, Sheldon Gerhardt, Joel Lemer, and Penny Nester. Across these fields, average seed yield was estimated at 1265 lb/acre (range of 255 to 1995 lb/acre). Harvestable sunflower stands averaged 16,700 plants/acre, with a range of 9,500 to 19,500 plants/acre. The majority of fields was reduced-till (64%) and planted in 30-inch rows (55%). Drought and low plant population were the most common yield-limiting factors. Plant lodging occurred in 73 percent of fields, with the high of 23 percent lodged plants in a McIntosh County field. Diseases present in at least 50 percent of the fields included phoma (82%) and leaf rust (100%; severity ranging from trace to 1%). Sclerotinia (wilt, mid-stalk rot and head rot) was found in 27 percent of the surveyed fields but incidence was only 1 to 2 percent.

Tim Becker and Joel Lemer conducting sunflower surveys.

Details from the field surveys may be obtained by contacting the CREC.