2017 Summary of Extension Field Surveys in South-Central North Dakota

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Integrated pest management (IPM) Survey

During the 2017 crop season, an integrated pest management (IPM) small grain, soybean and sunflower field survey was conducted by the NDSU Extension Service, in cooperation with the North Dakota Department of Agriculture, to identify crop pest presence and agronomic factors. Use of the survey data includes farmer, crop adviser and ag industry education; support for exporting North Dakota crops; and reference for educational and research projects.

State IPM survey coordinators are Janet Knodel, extension entomologist; Patrick Beauzay, State IPM coordinator and entomology research specialist; and Sam Markell and Andrew Friskop, extension plant pathologists. Brittney Aasand, crop scout based at the Carrington Research Extension Center (CREC), surveyed 381 fields in 11 south-central counties: Burleigh, Dickey, Eddy, Emmons, Foster, Kidder, LaMoure, Logan, McIntosh, Stutsman, and Wells.

The small grain survey was conducted in 240 **spring and winter wheat,** and 24 **barley** fields during late May to early August, primarily for leaf and head diseases, and insects. Primary diseases in the survey were bacterial leaf blight, barley yellow dwarf virus, rust (leaf, stem and stripe), Fusarium head blight (scab), Septoria, loose smut, net and spot blotch (barley), tan spot (wheat), and wheat streak mosaic virus (wheat). Insects surveyed were grasshoppers, aphids, cereal leaf beetle, wheat stem maggot and sawfly, and barley thrips.

The **soybean** survey was conducted in 81 fields from the last week of June through the first third of August to detect grasshoppers, soybean aphid, bean leaf beetle, spider mites and Western corn rootworm. Soybean aphids were first detected on July 10 but levels did not reach economic thresholds during the scouting period. Percent of soybean fields grown on previous crop ground: wheat = 35%, corn = 35%, and soybean = 29%. Sixty-one percent of fields were grown in 15-inch rows; 34 percent in 30-inch rows; and 5 percent were solid-seeded.

The survey included 36 **sunflower** fields inspected during the last week of June through the first third of August for grasshoppers, downy mildew, rust and verticillium wilt. Grasshoppers were found at low densities (range of 1-29/yd^2). Downy mildew was found in three fields and rust in only one field. Wheat was the most common crop that preceded sunflower (59% of total fields) followed by corn (38%).

Maps displaying summaries of the state survey results by crop and pest are available at the following website: www.ag.ndsu.edu/ndipm

Also, insect traps were placed in two **wheat** fields (CREC and Wishek area) to sample for two exotic insects (ND Dept. of Ag), and in a CREC **corn** field to sample for four exotic insects (NDSU Dept. of Entomology). Sunflower moth, banded sunflower moth and *Cochylis arthuri* pheromone traps were located at the CREC during mid-June through July to monitor the presence of these **sunflower** insects. All three moths were present in traps during the last half of July, with banded sunflower moth the most common. In addition, a Swede midge trap was placed in a CREC **carinata** trial (NDSU Dept. of Entomology). Also, soil samples for nematodes were collected from 11 **wheat** fields (one per county) for the ND Dept. of Ag.

Crop Scout Brittany Aasand places sunflower traps, June, 2017.

Sunflower Survey

A fall **sunflower** field survey was conducted 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 ND, eight oilseed fields were surveyed during September 14-28 in Eddy, Foster, Kidder, Logan, McIntosh, Sheridan and Wells counties by Greg Endres and the following extension agents: Tim Becker, Sheldon Gerhardt, Joel Lemer, Lindsay Maddock, Penny Nester, Crystal Shaunaman and Nicole Wardner.

Lindsay Maddock and Tim Becker conduct a sunflower survey.

Across these fields, average seed yield was estimated at 1800 lb/acre (range of 1250 to 2630 lb/acre). Harvestable sunflower stands averaged 16,950 plants/acre, with a range of 15,300 to 19,300 plants/acre. The majority of fields followed small grain (57%) or corn (29%); were reduced- or no-till (71%); and all planted in 30-inch rows. Diseases present in at least 50% of the fields included phoma (100%), leaf rust (75%; severity ranging from trace to 1%), and rhizopus (75%). Also, sclerotinia (wilt, mid-stalk rot and head rot) was found in half of the surveyed fields with incidence ranging from 1 to 13%. Bird feeding damage was noted in half the fields. Also, long-horned beetle larvae and associated stalk damage were found in Kidder and McIntosh county fields.

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