

Field Surveys for Small Grain and Canola Disease in South-Central North Dakota

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During the 2001 growing season, field surveys were conducted in North Dakota by the NDSU Extension Service to identify primarily disease presence in small grain and canola. Carrington Research Extension Center staff members Jerry Schneider, extension IPM crop scout, and Greg Endres, area extension specialist/cropping systems conducted the surveys in the south-central portion of the state coordinated by Dr. Marcia McMullen, extension plant pathologist, Dr. Phil Glogoza, extension entomologist, and Dr. Art Lamey, emeritus extension plant pathologist.

The **small grain** survey was conducted from early June to early August primarily for leaf and head disease in 16 south-central and east-central North Dakota counties in a total of 300 fields. The majority of surveyed fields were hard red spring wheat, but the survey also included several winter wheat, durum, and barley fields. The following is a summary of disease presence during two selected periods of the survey.

During June 18-26 when small grain was in the tillering to boot stages, minimal levels of leaf rust, Septoria leaf spot, or barley yellow dwarf virus were found. Tan spot was found in 94% (49 of 52) of surveyed wheat fields with average plant incidence of 50% and a range of 6 to 100%. Net blotch was found in all (6) barley fields at 8 to 100% plant incidence.

During the final survey period of July 31 to August 2 when small grain was in the late seed-development stages, leaf rust was found in 87% of the scouted HRS and durum wheat fields with an average flag leaf severity of 14%. Tan spot and/or Septoria leaf spot were found in all HRS and durum wheat fields with an average flag leaf severity of 17%. Loose smut was found in 67% (2 of 3) of the barley fields and 46% of the wheat fields. Fusarium head blight (scab) was found in 70% of the small grain fields scouted. Fields with scab had an average severity ranging from 7 to 97%.

The **canola** disease survey was conducted in 38 fields during August 15-21 in Stutsman, Eddy/Foster, Wells, and Sheridan counties. Swathed canola fields were surveyed for the presence of blackleg and Sclerotinia stem rot (white mold) by examining 40 lower stems and roots/field, aster yellows by examining 40 upper stems/field, and Alternaria black spot by examining 40 seed pods. The five-county average blackleg incidence was 1.7%, aster yellows incidence was 0.5%, and Alternaria black spot severity was 0.43%. Blackleg incidence was 13% in one Wells County field and 20% on one Sheridan County field, resulting in estimated yield loss of 9 and 14%, respectively.

Sclerotinia stem rot was the only disease commonly present at economic levels. Fields with over 30% sclerotinia incidence are considered to have economic loss, since this incidence represents an estimated 21% seed yield loss (each 1% sclerotinia incidence equals about 0.7% yield loss). Sclerotinia incidence averaged 28% infected plants in Stutsman County (range of 0-58%), 21% in Eddy/Foster counties (range of 3-55%), 40% in Wells County (range of 3-83%), and 38% in Sheridan County (range of 0-73%). Across the five-county area, 47% of the surveyed fields had economic loss due to sclerotinia.

Survey details may be obtained by contacting the Carrington Research Extension Center or the survey coordinators. Use of the survey data includes grower education, support for labeling of crop protection products, and directing research and extension programs.