Purpose of Study:
Scout alfalfa fields across the region documenting disease, insects, and growth stage from late May to mid August. Most fields selected were repeatedly sampled during this time to monitor progress (Figure 1).

Observations were compiled in ArcMap software to produce a geo-referenced summary of the observations. Information was used to alert producers, consultants, university researchers of pest incidence and severity in a timely manner with pest updates and survey reports. The effort was coordinated with U of MN Plant Disease Clinic and USDA-ARS Cereal Disease Lab.

Results:
Alfalfa weevil (AW) population development was an important focus of the alfalfa survey during the first month. Alfalfa weevil is a key insect pest that can cause economic losses prior to or right after the first cutting. The first sweep net samples collected were processed for the presence of AW larvae and classified by growth stage (instar) (Figure 2). The earliest processed samples already were judged to have 2nd, 3rd and 4th instars present. AW larvae were staged by head capsule width. The first samples corresponded to degree day accumulations (base 48°F) of 390 DD (Lamberton, MN), 320 DD (St. Cloud, MN) and 290 DD (Sabin, MN) (Figure 3). Improved, earlier sampling needed to be conducted to better define head width by growth stage, however. Validating the existing model for forecasting AW population development is a goal of this effort.

Figure 1. 2015 Alfalfa Crop Production Survey
Figure 2. Sequence of weekly maps summarizing Alfalfa Weevil populations.
Figure 3. Degree Day model guidelines for forecasting Alfalfa Weevil population development and feeding injury.
Multiple plant diseases were included in the alfalfa crop and pest survey. Only four (4) were detected with regularity: Lepto leaf spot, Spring black stem/Leaf spot, Yellow leaf blotch and Common leaf spot. The season long observations for these four are provided in Figure 4.

Maps for Lepto leaf spot and Spring black stem are presented for both incidence and severity. **Incidence** is defined as “the percent of sampled plants with the disease.” **Severity** is defined as “the percent of plant tissue that is diseased on affected plants.” Therefore, maps that report incidence are reporting percent plants affected. Severity tells us how bad infections were.

Maps for Yellow leaf blotch and Common leaf spot are presented only for incidence. Though they were found, the severity was generally low.