

Row, Oil, and Specialty Crops Trial Information

Corn

Entries for the corn grain trial are solicited from corn companies on a yearly basis. In 2005 corn growing degree days were 1844, normal is 1809. There is no corn data for 2004 because of the August 20 frost and cold temperatures during the growing season. The corn trials are overplanted and hand thinned to the correct population. Ears are picked and placed in the corn sheller by hand.

Description of traits:

Grain Yield: bushels per acre at 15.5 percent moisture, dockage free.

Test Weight: pounds per bushel, dockage free.

Days to Silk: days from planting to 50 percent of ears beginning to silk.

Harvest Moisture: percent seed moisture at harvest.

Height: inches, to top of tassel.

Sunflower

The first killing frost for sunflowers in 2005 was on October 5 (28^o F.). Our normal killing frost date is September 21(28^o F.). Sunflower growing degree-days from May 12 to October 5 was 2599. Normal is 2513. All hybrids matured before the first killing frost.

The trial in 2004 had a very high incidence of sclerotinia head rot and a lower level of sclerotinia stalk rot. Most of the stalk rot was the mid-stalk rot. Because of the high levels of head rot in the trials the yield data was too unreliable and data is not presented. Entries for sunflower trials are solicited from sunflower companies on a yearly basis. The short season oil hybrid trial was not conducted this year because of lack of interest from companies.

Description of Traits

Yield: pounds per acre at 10 percent moisture, dockage free

Test Weight: pounds per bushel, dockage free

Harvest Moisture: percent seed moisture at harvest

Bloom: Days from planting to 10 percent bloom

Height: inches, taken at harvest

Oil: percent oil of seed, 10% moisture basis. Oil percentages of NuSun and High Oleic hybrids were adjusted for oil type.

Seed Size: percent of seed that remains over the stated sieve size.

Days to Mature: a visual rating of plant maturity at the R-9 growth stage (bracts become yellow and brown).

Drybean

Soybeans

Soybean trials were conducted at Langdon and off-station locations at Cavalier, Park River and Pekin. There were two variety trials conducted at each of the four locations, conventional and Roundup Ready. Entries for soybean trials are solicited from soybean companies on a yearly basis.

Soybeans respond to day length so the actual calendar maturity date is highly influenced by latitude location. Each variety therefore has a narrow range of north to south adaptation. Soybean yield and quality are affected if a season ending freeze occurs before a variety reaches its physiological maturity. Days to maturity are listed in the tables and indicate when the plants for a variety are observed and estimated to be physiologically mature. Relative maturity ratings are also provided by each company. These ratings consist of a number for the maturity group designation (00, 0) and is followed by a decimal and another number, ranging from 0-9, which indicates maturity ranking within each maturity group. For example, the variety Jim is indicated as 00.6 making it a medium maturing variety in the 00 group. Walsh would be a 0.0 making it one of the earliest variety in the 0 group where as Barnes is a 0.3 making it a early medium in the 0 group.

Soybean variety resistance to iron chlorosis results can be found in extension bulletin A-843 or at www.soilsci.ndsu.nodak.edu/yellowsoybeans.

Description of Traits:

Yield: bushels per acre, dockage free

Test Weight: pounds per bushel, dockage free

Height: inches

Days to mature: days to physiological maturity at R7 reproductive stage (one normal pod on the main stem obtains mature brown or tan color). Days to mature listed as NA or -- had not achieved maturity on at least three replicates prior to the first killing frost.

Lodging: scale of 0-9, 0 equals plants standing erect, 9 equals plants laying horizontal. Years with no lodging reported indicate no lodging in the trial.

Protein: grain protein percent on 13% moisture basis.

Oil percent is reported at 3% moisture in 2003 and 13% in 2004 and 2005.

Drybean trials were conducted at Langdon and

Cavalier. The trial at Langdon in 2004 froze on August 20 and no data is reported.

Description of Traits

Yield: pounds per acre, dockage free

Days to mature: period from planting to 90 percent mature pods (pods change color and texture - termed "buckskin")

100 KWT: weight of 100 seeds in grams

Canola

The canola trials are composed of solicited entries from various companies. There are two canola trials. A Roundup Ready trial and a conventional trial which includes Clearfield and Liberty Link varieties along with the traditional varieties. In 2002, both the conventional and Roundup Ready trials were planted on May 3. Soil temperature were very cold for a period of about 22 days after planting. All aspects of trial management for both trials were the same, except the conventional trial had a preemergence herbicide applied. This coupled along with very cold soil temperatures, for an extended period of time, appeared to be the cause of reduced plant stands and vigor in the conventional trial compared to the Roundup Ready trial. In 2004, the very wet weather in May resulted in some sulfur leaching and/or denitrification in the Roundup Ready trial area. Two applications of foliar AMS were applied to the trial. This along with plant root growth into the leached sulfur zones brought the plants out of the deficiency and very good yields were still achieved. Some hail damage occurred on August 29. The earliest maturing plots generally received the most damage. Two Roundup Ready check varieties were included in the conventional trial for comparison to conventional and other HTC varieties under conventional production practices.

Percent cover notes were taken to help determine differences in stand and vigor between varieties in - 2002,2004-2005. The trials are sprayed for white mold. Seed is treated with an insecticide and fungicide package and an additional foliar spray treatment is applied for flea beetle control if warranted.

Description of traits:

1st flower: days after planting when 10% of plants have at least one open flower

End flower: days after planting when 90% of plants have completed flowering

Days to mature: days after planting when seeds on

lower third of main raceme are dark brown to black, seeds on middle third of main raceme are turning brown to black and seed on top third of main raceme are green but firm and pliable

Plant height: height in inches from soil surface to top of main raceme

Yield: pounds of seed/acre

Lodging: scale of 0-9, 0 equals plants standing erect, 9 equals plants laying horizontal

Oil: percent oil, 8.5% moisture.

%Cover: Visual rating of percent area of plot covered by plant growth. This is a measure of stand and vigor. Plants were at 4-5 leaf stage at time of rating.

Hail damage: 0=no damage, 10=the most. The rating is a relative rating between plots and not an estimate of yield loss. No adjustments to yield have been made.

Specialty Crops

Description of Traits

Yield: pounds per acre, dockage free.

Test Weight: pounds per bushel, dockage free

Days to Flower: days after planting when 10 percent of plants have at least one open flower

Days to Head: days from planting to heading

Lodging(Harvest Ease): scale of 0-9, 0 equals plants standing erect, 9 equals plants laying horizontal.

Height: in inches, from base of plant to top, excluding beards if present

Oil: percent oil, "as is" moisture basis

Forage Trial

Description of Traits:

Yield: tons per acre

Height: in inches, from base of plant to top, excluding beards if present

Dry Matter: percent dry matter

Crude Protein: is calculated by taking the Nitrogen content of the forage x 6.25

Total Digestible Nutrients: This is an estimate of the digestibility of the forage.

Acid Detergent Fiber: This value refers to the cell wall portions of the forage that are made up of cellulose and lignin. These values relate to the ability of an animal to digest the forage. As ADF increases, digestibility of a forage usually decreases.

Neutral Detergent Fiber: This value refers to the total cell wall, which is comprised of the ADF fraction plus hemicellulose. NDF values are important in ration formulation because they reflect the amount of forage the animal can consume.