

The ONTARIO CORN COMMITTEE is made up of representatives of Agriculture and Agri-Food Canada, the Ontario Ministry of Agriculture and Food, the University of Guelph, the Ontario Soil and Crop Improvement Association, the Ontario Corn Producers Association, the Seed Corn Growers of Ontario and the Canadian Seed Trade Association. Tests are conducted each year by the following cooperating agencies: Ridgetown College, University of Guelph, Ridgetown; Crop Science Department, University of Guelph; Kemptville College, University of Guelph, Kemptville; and Agriculture and Agri-Food Canada at Ottawa.

TESTING METHODS

Hybrids entered in The Ontario Corn Committee's Hybrid Corn Performance trials are selected by the seed companies. A testing fee is charged per hybrid per replication. A hybrid must be entered in all trials within a table. In each trial, hybrids are replicated in a suitable experimental design. Trials are machine planted with an excess of seed and thinned at an early growth stage to obtain a uniform population. A row width of 30 inches is used in all trials. Immediately before harvest, a count is made of all plants broken below the ear to determine the percentage of broken stalks. The moisture percentage of the grain is determined at harvest time. The weight of grain harvested from each plot is determined and the yield of shelled corn is calculated at 15% moisture. Test weights are recorded either during harvest, using monitoring equipment, or in the laboratory, using procedures recommended by the Canada Grain Commission. Nitrogen rates may be higher than those recommended by OMAF to compensate for any variability in soil nitrogen supply.

INTERPRETATION OF RESULTS

Within each table, hybrids are identified by brand and/or hybrid number or name. Hybrids are listed in approximate order of maturity based on heat unit ratings provided by the companies. Hybrid selection should be based on the most data available. Greater emphasis should be put on averages from several locations and years because these provide a more accurate prediction of future performance than do single location results.

Yield - The yield data for Bt and non-Bt hybrids are presented in separate columns in the data tables, to assist growers in selecting hybrids without Bt protection for use in refugia or areas with low corn borer pressure. Yield indices for all hybrids are based on the average yield for the whole trial (or trials), (i.e. including both Bt and non-Bt hybrids). Thus one can make direct comparisons between Bt and non-Bt hybrids in adjacent columns.

Broken Stalks - Because all hybrids in a trial are harvested on the same date, the early hybrids within each table tend to show a greater amount of stalk breakage than do later hybrids. Stalk strength should be compared only with hybrids of the same maturity.

Index - The index in the tables indicates a percent of the average of all hybrids included in the trial or equal trials. Index figures above 100 reflect the percentage by which a hybrid is above the average, whereas index figures below 100 show the percent below the average. Small differences in index are not significant within any table. When a hybrid consistently has a higher index over two years, this difference is probably real and should be considered when choosing a hybrid. The average yield for each table is given in bushels per acre. You can calculate the actual yield for a hybrid by multiplying the average yield times its yield index and dividing by 100. The average test weight is given in kg/hl (kilograms per hectoliter). You can calculate the actual test weight of a hybrid by multiplying the average test weight times its test weight index and dividing by 100.

LSD (0.10) - The LSD is a measure of variability within the trial. There is a ninety percent probability that yield indices that differ by an amount greater than the LSD are different. Yield indices that differ by an amount less than or equal to the LSD should be considered to be equal.

European Corn Borer Pressure - Four rows of each of two adapted non-Bt hybrids were planted adjacent to each Performance Trial. Ten plants were selected from each hybrid for evaluation during the week of September 20th. The entire stalk of each plant was split and the length of corn borer tunnelling was measured. The rating for corn borer pressure was determined using the average total tunnel length per plant (cm.) using the following scale:

None (N) - under 0.5 cm Low (L) - 0.6 to 4.9 cm Moderate (M) - 5.0 to 14.9 cm High (H) - over 15 cm

Managing Bt Corn - When using Bt corn, it is imperative that a refuge area of non-Bt corn be planted near the Bt corn to reduce the risk of developing insect resistance to Bt. This refuge should be equivalent in area to at least 20% of the area planted to Bt corn. It can be achieved by planting strips at least 6 rows wide throughout the field or by planting block of non-Bt corn. The refuge area must be within 400 m of the Bt corn. The yield data for Bt and non-Bt hybrids are presented in separate columns in the data tables, to assist growers in selecting hybrids without Bt protection for use in refugia or areas with low corn borer pressure.

Seed Treatment - Virtually all of the hybrids entered in the 2004 Performance trials were treated with Poncho 250 to control soil insects. Hybrids that were not treated with Poncho 250 are not identified in the report. There was no significant damage from soil insects at any of the locations.