Evaluation Of Hybrid Differences For Corn Grain Ethanol Yield

(Interim Report)

Purpose:

To determine if there is verifiable ethanol yield differences between current hybrids available in Ontario. This is in response to seed company marketing of “ethanol or starch” select hybrids without much data being available that describes the hybrid advantages.

Methods:

This project involved the collection of corn samples from OSCIA Independent Corn Adaptability Trials (ICAT) plots throughout the Golden Horseshoe region, but primarily in the Brant county area. Utilizing ICAT plots is important in allowing the collection of sufficient samples of the same hybrids from various production systems, climatic zones and geographies. This puts the same series of hybrids under various “stresses” which when analyzed for ethanol yield, should allow any hybrid to hybrid differences in ethanol yield potential to be identified and quantified. Plots which have a standardized protocol and hybrid selection in addition to internal checks (3 occurrences of a check variety across the plot) ensure that a statistical analysis of the extraction data has sufficient replication to provide scientific confidence in the data.

Samples collected from ICAT plots during the 2004 and 2005 growing season have been dried in the sample driers at the Elora Research Station of the University of Guelph. Samples will be sorted, packaged and shipped from the University.

Through investigation, OMAFRA staff have acquired from Dr. B. Dien, National Centre for Agricultural Utilization Research, ARS, USDA, Peoria IL, and Dr. Kent Rausch, Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign, IL. a Dry Grand Processing methodology for determining ethanol yield from corn grain samples. Negotiations are underway with the Dept. of Food Science, University of Guelph and Commercial Alcohols to conduct the analysis on the collected samples

Results:

No results have been reported to date as negotiations continue for a suitable methodology and laboratory to conduct the analysis phase of the project.

Acknowledgements:

The contribution by the Brant and Halton SCIA’s is greatly appreciated. Thanks to the University of Guelph for access to drying and storage facilities at the Elora Research Station. Funding for the project to date has come from an OSCIA Regional Partner Grant and contributions from the local OCPA association.

Project Contacts:

Ian McDonald, OMAFRA, ian.mcdonald@omafra.gov.on.ca