

## Evaluating On Farm Management Practices

### OSCIA Tier 1 - Dundas

#### **Purpose:**

To evaluate various management practices through on-farm research plot trials.

#### **Methods:**

Local farmers volunteer to evaluate a variety of growing practices, crop applications, and crop additives on their farms and compare them to their standard practice.

This year, the projects included:

#### Soybean Yield Response to Foliar Fungicides

- Acapela vs no fungicide
- Priaxor at R1 vs Priaxor at R2 vs no fungicide

#### Soybean Yield Response to Foliar Fertilizers

- ManZinPhos Max Plus vs no fertilizer

#### Soybean Yield Response to Population

- Drilled beans, 15 inch rows; 155000/170000/185000 population/acre

#### Alfalfa Yield Response to Starter Fertilizer

- 100 lbs/ac of MAP applied through the seed drill hopper

#### Corn Yield Response to Intensive Management

- Intensive: 40,000 pop, 200 lbs/acre nitrogen, Priaxor application
- Conventional: 35,000 pop, 150 lbs/acre nitrogen, no fungicide

#### Corn Yield Response to Cereal Rye Cover Crop

- Cereal Rye established in September following soybeans
- Sprayed cereal rye 2 days prior to no-till planting corn vs. spraying 2 days prior to cultivating and planting

#### Corn Yield Response to Foliar Fungicides

- Priaxor vs no fungicide application

#### Corn Yield Response to Late N Application (Y-Drop Project)

- various nitrogen applications and combinations with and without applications vs y-drop

#### Corn Yield Response to Seed Treatment

- Fortenza vs fungicide only
- Lumivia vs fungicide only seed)

**Results:**

- Soybean Yield Response to Foliar Fungicides: Addition of a fungicide resulted in a 1 bus/acre increase in yield.
- Soybean Yield Response to Foliar Fertilizers – There was no significant difference in yield with the application of the foliar fertilizer.
- Soybean Yield Response to Population – Yield was greatest at the 155,000 seeds/ac population.
- Alfalfa Yield Response to Starter Fertilizer: Addition of MAP at alfalfa seeding resulted in an additional 55 lbs/acre of alfalfa.
- Corn Yield Response to Intensive Management: Intensive Management of Corn resulted in 9 bushels/acre greater yield compared to the conventional management system. The break-even point for the cost of additional inputs and the fungicide application is 15 bushels/acre.
- Corn Yield Response to Cereal Rye Cover Crop: There was only a 1 bushel/acre difference in yield between the no-till and conventional system for planting corn into the cereal rye cover crop. Cultivation however has an additional cost per acre, which is greater than the 1 bushel yield gain.
- Corn Yield Response to Foliar Fungicides – Final yields were equal between fungicide and no fungicide corn treatments. However, cost of fungicide, application and trampling resulted in a net dollar loss per acre.
- Corn Yield Response to Late N Application (Y-Drop Project): The highest yield and the least input costs were found when all nitrogen was applied pre-plant.
- Corn Yield Response to Seed Treatment (Fortenza vs fungicide only; Lumivia vs fungicide only seed): A difference of 3 bushels and 7 bushels were observed between fungicide only and Fortenza/fungicide or Lumivia/fungicide, respectively.

**Summary:**

Overall, there was no significant gain to additional management applications within these trials, with the exception of the application of MAP at time of alfalfa seeding. However, this may reflect the dry conditions of the 2016 growing season in some cases, and the relatively low levels of disease in this portion of the province.

**Next Steps:**

These projects should be repeated in subsequent years to compare the varying growing conditions and weather on the various treatments. Additional products and treatment timings could also be considered to better understand what additional benefits these products and the timing of their application can bring for increasing crop yields.

**Acknowledgements:**

Thank you to all the growers who took the time and put in the effort to make these on-farm projects possible:

- Soybean Yield Response to Foliar Fungicides: Brugline Farms, Cedar Lodge Farms
- Soybean Yield Response to Foliar Fertilizers: Brugline Farms
- Soybean Yield Response to Population: Brugline Farms
- Alfalfa Yield Response to Starter Fertilizer: Tibben Farms.
- Corn Yield Response to Intensive Management: Brugline Farms
- Corn Yield Response to Cereal Rye Cover Crop: Brugline Farms
- Corn Yield Response to Foliar Fungicides: VandenBosch Farms Inc.; Cedar Lodge Farms
- Corn Yield Response to Late N Application (Y-Drop Project): VandenBosch Farms Inc.
- Corn Yield Response to Seed Treatment (Fortenza vs fungicide only; Lumivia vs fungicide only seed): Bycrest Farms, Tyler Hoy

Special thanks to Gilles Quesnel and Garry Brugmans for coordinating these on-farm projects.

**Project Contacts:**

Holly Byker, DSCIA Secretary/Treasurer (dundas.oscia@gmail.com)

**Location of Project Final Report:**

Results from these studies were presented at the Dundas AGM on December 2<sup>nd</sup>, 2016. The presentation slides are attached. These slides are also sent out with our Annual Report to Dundas Soil and Crop Improvement Association Membership.