Production of Northern Ontario Short Season GRAIN Corn Under Biodegradable Plastic Mulch, Using A SAMCO Planter

(NEOSCIA & NWOSCIA Paired Partner Grant) 2013-2014

Purpose:

A mid-sized SAMCO “3 in 1” corn planter was originally tested in Temiskaming by independent farmers in 2012. The farmers were so enthused with the result of the SILAGE CORN, that they purchased a larger unit for the 2013 season. The two Soil & Crop Associations were equally impressed, considering the general improvement in weather-related northern growing conditions over more than a decade, and developed this project to introduce this new technology to farmers across the North. This would be done by way of demonstrations with a two row unit that would be transported to all 11 districts in the region. It was decided to test the SAMCO for GRAIN CORN production.

Background:

The Project was assigned a “Paired Partner” grant from OSCIA, and was able to obtain an agreement from “FedNor” to receive additional extensive funding in order to undertake the project. Unfortunately, SAMCO was unable to supply a demonstration unit (and mandatory professional technician) for the 2013-2014 period. As a result, this project failed in its original purpose.

However, due to the interest created by the proposed OSCIA regional project, the New Liskeard Agricultural Research Station (University of Guelph) staff decided to purchase their own 2 row SAMCO demonstration unit. They were allowed to do so by SAMCO, as NLARS had their own professional staff.

Methods:

In the meantime, local farmers used their new, larger field scale units in 2013 and 2014. Positive results were obtained in 2013, and these are reported in the February 2014 edition of “Crop Advances”, now available on the internet. The specific grain corn trial evaluated was done on the farm of Terry Phillips.

Due to weather conditions, the situation in 2014 was quite different. Spring came 2 to 3 weeks late in Temiskaming. Only a few fields were planted at the ideal time, before rain again halted planting for approximately another week. Most fields were planted near the end of May, about three to four weeks beyond the estimated ideal planting date. The RCC for NEOSCIA made a point of making informal observations on the SAMCO fields over 2014.

Results:

2014 was the worst year for Temiskaming farmers in 4 to 5 decades. After a late spring, the normal heat of June and July was absent. Some small grain crops were successfully harvested in August. However, by mid-August, continual damp weather slowed harvesting down significantly. At the end of the harvest season, it was reported that about 40 percent of small grains and in excess of 80 percent of corn, soybean and canola remained in the field. Snow fell and stayed in early November. It was reported by the manager of the local “Co-op” that only those first fields of SAMCO grain corn were of “decent” quality.

A key observation was made in June at some of the saturated, late planted SAMCO fields. The corn had emerged intermittently, and some was growing horizontally under the biodegradable clear plastic mulch. This had never occurred in the previous two years. It is ASSUMMED that the plastic had not been exposed to sufficient UV rays from sunlight to initiate significant decomposition. The plastic did decompose later in the month, but much of the potential vertical growth of the corn was lost. A key observation from this project is that biodegradable plastic mulch may be slow to decompose under cool, wet, cloudy conditions, relative to corn growth rate, when corn is planted too late in the season (see Figure 1).

Figure 1. Corn growing horizontally below the SAMECO installed clear biodegradable mulch. (Jun 22, 2014).

Although measurements have never been taken, general observations indicate that late planted SAMCO fields did no better than corn planted by regular methods. This was quite apparent in an informal late May trial (with a mulch layer that was different from the SAMCO technology) undertaken at NLARS in 2013. In any case, only the early planted SAMCO grain corn was successfully harvested in 2014.

Demonstration:

Leisure Farms of Sturgeon Falls (Nipissing District) was able to purchase a small “used” SAMCO unit. The owner was trained on the use of the unit by one of the farmers who owned a full scale unit at Temiskaming. Leisure farms then invited other farmers from Nipissing, Sudbury, and Parry Sound Districts to come to an NEOSCIA sponsored demonstration day to learn the skills necessary to operate the SAMCO. This unit was used in 2014 to plant SWEET Corn, which was harvested successfully. The unit may be used for regional trials in the future.

Summary:

Every technology has its time and place. The SAMCO equipment is designed for early planting of corn into fields that have been properly prepared in the previous fall, and are suitably dry for surface tillage and planting early in the spring. It is clear that there is an

economical cut-off date for SAMCO planting in Temiskaming. This will have to be scientifically determined by the researchers at NLARS. However, to this observer of Temiskaming agriculture, based on three years of observations, it would appear that the end of the economic period for the use of the SAMCO corn planter could be about "Mother's Day" (early to mid-May).

Location of Project Final Report:

As an incomplete project, the above report will be the only document developed. Articles on SAMCO use and trials will appear in the NEOSCIA "Breaking Ground" farm newsletter from time to time in the future. For further information, contact Graham Gambles, RCC for NEOSCIA, via

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