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## **Demonstration of Solid Seeded Corn Silage**

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### **ABSTRACT**

Corn is a very popular silage crop in Southern Alberta for feeding cattle. The conventional way to plant corn is with a precision row crop planter. Another method to plant silage corn is with a conventional air drill. A project was conducted at the CACDI Lethbridge Farm to demonstrate both methods.

Yield of the corn seeded with the precision planter was higher than the corn seeded with the air drill. The lower yield of the corn seeded with the air drill was due to the uneven plant spacing along the rows. Flexi-coil, the manufacturer of the air drill, offers a segmented roller for seeding corn. The segmented roller should be used in future demonstrations.

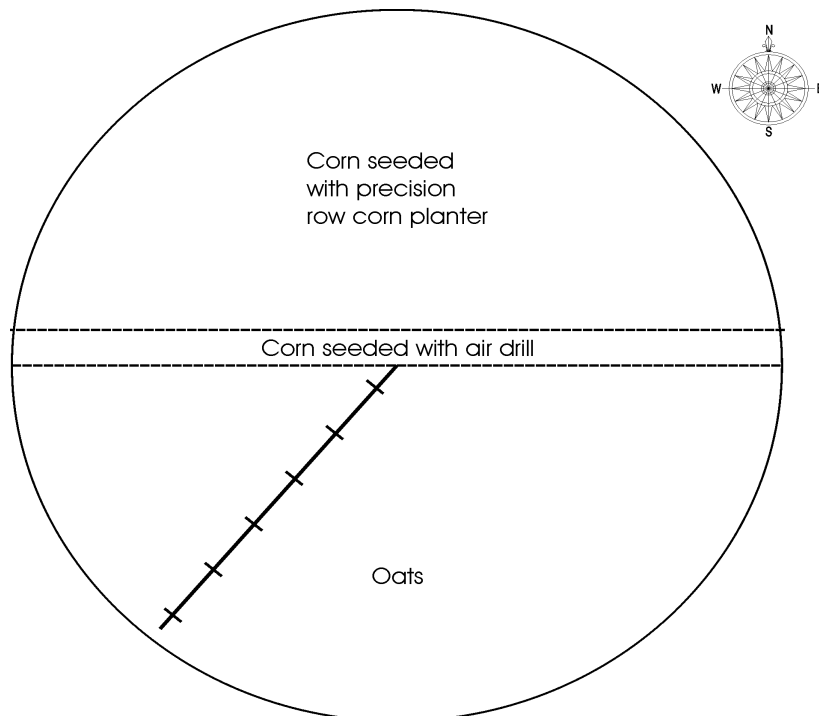
## Demonstration of Solid Seeded Corn Silage

### INTRODUCTION:

Corn is a very popular silage crop in Southern Alberta for feeding cattle. The conventional way to plant corn is with a precision row crop planter. Row crop planters are dedicated, expensive and require special tractors. Another method to plant silage corn is with a conventional air drill. A project was conducted at the CACDI Lethbridge Farm to demonstrate both methods.

### MATERIALS AND METHODS:

Silage corn was planted into tilled barley stubble at the CACDI Lethbridge Farm. The north half of the pivot #3 was planted to corn (Figure 1). The diameter of pivot #3 is 600m (1968 ft). The total area planted to corn was 33 ac (13 ha). The area closest to the pivot center was planted with the air drill on May 15<sup>th</sup>. The area was 100 ft (30 m) wide and covered 4.5 ac (2 ha). The rest of the field was planted with the precision row crop planter on May 11<sup>th</sup>. The seeding rate for the air drill was 33,600 seeds/ac (82,990 seeds/ha). The seed spacing with the precision row crop planter was 12 in (25 mm) for a seeding rate of 32,500 seeds/ac (80,280 seeds/ha). The openers on the precision row crop planter were on a 15 in (30 cm) spacing and on the air drill were on a 9 in (23 cm) spacing. The air drill was a Flexi-coil 5000 with narrow knife openers and a fine seed roller. The precision planter was a John Deere 1780 MaxiMerge II. The corn variety was Roundup Ready 2512. The corn seed count was 2100 seeds/lb (4600 seeds/kg).



**Figure 1:** Pivot #3

The soil background nitrogen level was measured at 163 lb-N/ac. Nitrogen and phosphate were applied to the field at a rate of 60 and 30 lb/ac (67 and 34 kg/ha). The granular fertilizer blend was spread on the field prior to the pre-seeding tillage operation. Table 1 outlines the post emergent chemical applications to the corn field.

Date	Operation	Rate of Roundup (L/ac)
May 25	Spot spray	0.5
May 28	Spot spray	0.5
June 1	Spot spray	0.5
June 12	Spot spray	1
June 20	Spray entire field	1

**Table 1:** Post emergent chemical applicaitons

The corn was irrigated with 17.5 in (445 mm) of water during the growing season. Rainfall was recorded at 1.6 in (40 mm) during the growing season.

The corn was harvested for silage on September 18<sup>th</sup> with a John Deere self propelled forage harvester.

## RESULTS:

Visual observations were made on the growth of the corn. Establishment of the corn planted with the precision row crop planter was very good. Growth of the corn planted with the air drill was delayed. The delayed growth of the corn planted with the air drill continued until late in the growing season. There was no visual difference between the two planting methods at harvest time.

Yield samples were taken by harvesting a single pass the length of the field. The yield of the corn planted with the precision row crop planter and air drill was 19.2 ton/ac (48.2 tonne/ha) and 17.3 ton/ac (43.4 tonne/ha), respectively.

## DISCUSSION AND CONCLUSION:

The corn planted with the air drill was planted deep due to dry soil at planting time. This deep planting depth caused the delayed growth and decreased yield of the corn planted with the air drill. The uneven plant spacing of the corn in the rows also contributed to the decreased yield of the air drill planted corn.

Flexi-coil, the manufacturer of the air drill, offers a segmented roller for seeding corn. The roller has a narrow fluted area. This causes the roller to turn faster resulting in more evenly spaced seeds. The segmented roller should be used in future demonstrations.

## ACKNOWLEDGEMENTS:

Monsanto provided a portion of the post emergent chemicals for the project. M & R Farms seeded the corn with the precision planter. The Agricultural Technology Centre (ATC) tilled the field, seeded the corn with the air drill and sprayed the crop. Dave Duban harvested the corn.

