

## Links

### Samco Agricultural Manufacturing:

[www.samco.ie](http://www.samco.ie)

For more information, please contact Samco Agricultural Manufacturing, your local Samco dealer, or the Provincial Corn Technician (Production & Market Development Division).

Other information pamphlets are available online from the Department of Natural Resources at:

[www.nr.gov.nl.ca/agric/](http://www.nr.gov.nl.ca/agric/)

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Department of Natural Resources  
Production & Market Development  
Division  
P.O. Box 8700  
St. John's, NL  
A1B 4J6

t: 709.729.6758  
f: 709.729.0205



# Silage Corn Production: The Samco System



## Samco Integrated Crop System

The Samco Integrated Crop System was developed by Sam Shine in Limerick, Ireland. This system uses plastic mulch to encourage rapid early growth very early in the spring. Planting can start 30 days before the last spring frost and the plastic allows for a 200 to 300 Corn Heat Unit (CHU) heat start on the growing season.

### Site Selection and Preparation

Newly cleared land should not be used for corn production. Older fields that have been limed regularly and have seen lots of manure are the best choice for corn production. Before corn is planted in any field, a soil analysis should be completed to check the soil pH and fertility levels.

Fields should be plowed:

- This turns down any surface trash that could interfere with plastic or weed control.
- Plowing gives the 6 to 8 inches of loose soil needed to keep the plastic in place.
- Plowing helps to warm the ground faster in the spring and also makes manure easier for the plant to utilize.

Each field should be harrowed in the opposite direction to which it is going to be planted to ensure adequate soil to cover plastic.

### Seeding Date and Variety Selection

Silage corn under plastic requires an early seeding date which depends on spring weather conditions. The plastic brings the soil temperature up very quickly even when outside temperatures are cool. Plant germination can occur seven to ten days after planting. In order to receive the full benefit of the plastic, seeding dates should be as early as weather conditions permit. From early May until early July, the plastic can produce an extra 200 to 300 CHU. These extra heat units are very important component in harvesting a mature crop.

When choosing a variety of silage corn, the most important thing to remember is to select varieties that have low CHU ratings. Also, only select varieties that have been tested by the Department of Natural Resources or Agriculture and Agri-Food Canada. Some varieties that have yielded consistently are Pioneer 39W54, Pioneer 39P78 and DeKalb DKC-2675. Each of these varieties has good stalk strength for breaking through the plastic and yield well. Round Up Ready varieties are of little benefit to the Samco System because the herbicide is applied pre-emergence rather than post-emergence. We have been working with three different seeding rates over the last four years which are 82,000 plant/ha, 93,000 plants/ha and 104,000 plants/ha. We recommend 93,000 plants/ha for best results with the Samco System.

### Weed Control

Herbicide recommendations for silage corn under plastic mulch are a work in progress. Herbicide application with the Samco System is pre-emergence. Primextra 2 Magnum @ 4 L/ha + Callisto @ 300 ml/ha has been an effective herbicide tank mix over the last period of years on new and second year corn fields. On older fields where Lambs Quarters have been a consistent problem, Prowl @ 4.2 L/ha + Callisto @ 300 ml/ha has been very effective in controlling this weed.

In the event that the pre-emergence herbicide did not work well because of low soil temperature or rainfall after planting, a post-emergence application may be required. Primextra 2 Magnum @ 3 L/ha can be used up until the 6 leaf (V6) stage. After the 6 leaf stage, Primextra may cause damage to the plants. At this stage, Laddok @ 3.5 L/ha + Assist @ 1 L per 100 L of water can be applied. In the event that grass is a problem, post-emergence Accent can be used @ 33 g/ha + a non-ionic surfactant @ 2 L per 1,000 L of water.

## Timing of Harvest

The best time to harvest is 30-35% whole plant dry matter content. The digestibility of the whole plant tends to increase until one half to two thirds milk line. After 35% dry matter, the digestibility of the stover decreases dramatically (A.B. Kwabiah, 2005).

Corn that has received frost should be harvested within a couple of days after the frost to minimize dry matter and nutrient losses. The longer harvest is delayed dry matter yields decrease and digestibility also decreases.

## Conclusion

Silage corn is proving to be a very valuable crop for farmers all across the province. The Samco System is giving the ability to produce consistent quality corn silage in areas where it was thought it could not be grown. However, silage corn is a very expensive crop to produce and if maturity is not reached the economics of producing it don't add up. In most areas of the province (excluding areas of the Codroy Valley), planting silage corn conventionally without plastic is a very high risk practice which can lead to crop failure or a very immature crop at harvest which can lead to rumen upsets.