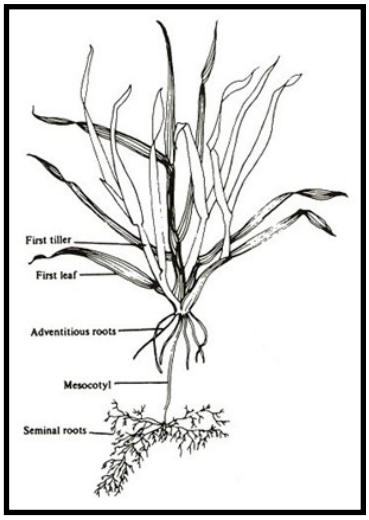
# MEMPHREMAGOG
# REGIONAL CONSERVATION PARTNERSHIP PROGRAM

2021

## Conservation Practice Overview

**Double Cropping Rotation Conservation System:** Planting a shorter day (77-85 day)corn with an average 1850 growing degree day requirements. Planting cover crops in early fall for greater tiller development and longer seasonal protection of the soil and harvesting for feed the following spring.




### Practice Information

Cover Crops are used to control erosion to have beneficial effects on water quality, add fertility and improve overall soil health. Using cover crop as forage can provide dual purpose and economic benefit to improve overall system profitability.

When cover crops are seeded early they have time to produce full tiller development – at least six tillers. Tillers are new grass shoots and the process by which new aerial shoots emerge is called tillering. Tillering generally begins around 40 days after planting. Successful tillering in the fall provides high density stands for harvest at boot stage in the late spring and will provide increased plant residue for soil cover in the winter and early spring seasons when the soil is most vulnerable to erosion.

### Area of Practice Focus

Available to producers in the Memphremagog and Tomifobia Watersheds in Orleans County Vermont.

### Foregone Income Program Implementation Payments

$53/acre *up to* 50 acres for three years. Plus producers can stack other practices like conservation crop rotation and cover crop for a complete system.

### Common Associated Practices

No Till (329), Reduced Till (345), Nutrient Management (590) Conservation Crop Rotation (328), Row arrangement (557), Soil Health Management Plan (116),Soil Testing (216)


### Program Implementation Requirements

Required cover crop planting date: September 21st

Cover crops and planting method requirement: Drilled Rye, Wheat or Triticale

Required cover crop planting rate: 75lbs/acre

Producers will need to provide practice financials (inputs costs), corn and cover crop planting dates, harvest dates and yield records.

### What ifs?

If your corn doesn't reach relative maturity in time for harvest and planting the cover crop by September 21st, no problem but the $53/ac foregone income payment can't be made.

If you can't harvest the cover crop for forage, no problem.

If you want to graze the cover crop, no problem! Just be aware of possible health effects to the cows.

## Advantages:

- Harvest 2-3 tons of dry matter from the cover crop in the spring for high energy supplemental feed (UVM Staff).
- Harvested ryelage feed can produce an additional 3lbs of milk/day (UVM staff).
- A shorter day corn is harvested earlier, so it is not vulnerable to frosts and unpredictable weather that could damage yields.
- Shorter-season hybrids have been developed to be very competitive.

## Considerations:

- Works best on farms that have labor resources for timely seeding and harvesting in short aviable windows for this double cropping rotation.
- Works best on farms that have their own planting and harvesting equipment especially a merger.
- Works best on no till fields to reduce the need for rock picking and ash in the cover crop feed.
- Works best on farms that grow enough corn silage feed, so that risk is comfortable.
- Works best on dry fields.
- Plant the cover crop at a high rate per acre for increased yields.

## Current Cultural Practices

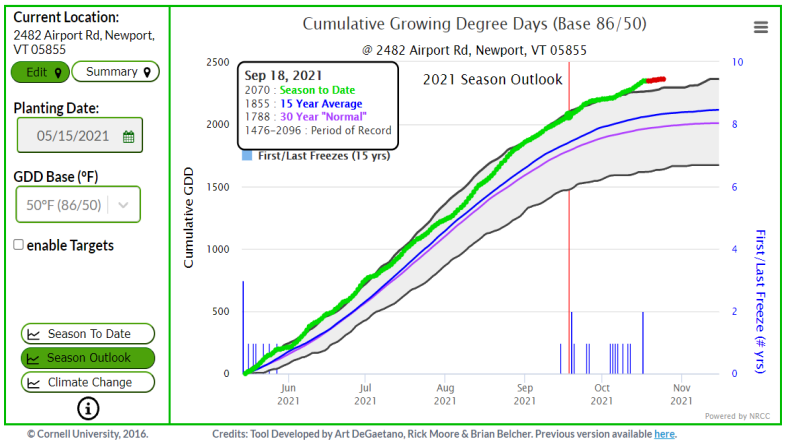
Based on the 2017 Agricultural Census data there are 24 farmers who grow silage corn on 13,121 acres in Orleans County. Many of these farms are planting a 90-100 day corn and have established cover cropping practice..

Corn silage is a very important crop to dairy farmers because it is a high energy crop. Corn silage quality is severely impacted by climate conditions. Corn silage harvested before it is fully mature can greatly decrease the overall quality of the feed. In our region, with growing zones of 3-4 with often adverse fall weather damages the winter cover crop establishment and successful tiller growth. Then the cover crop isn't providing the farm adequate biomass for soil coverage during the winter and other potential cover crop production benefits.

Based on USDA Farm Service Agency data for the last five years farms reported first planting dates are on average May 5th and on average 61% of fields are planted by May 21st. Farmers in northern Vermont generally harvest their corn the last week in September to early October, then drill in cover crop seed by October 10th and terminating the cover crop in the spring when corn silage is seeded.

## Program Cultural Practices

Using cover crop as forage can provide dual purpose use of the crop and economic benefit to improve overall system profitability. Based on the Cornell Climate Smart Farming Growing Degree Day Calculator 15 year and 30 year average, if farmers in Orleans County can plant a 77-85day, 1850 growing degree day corn by May 15th they can potentially have enough growing degree days to get corn to maturity, harvested and cover crop in by September 21st.




**Estimated Economic Effects of Soil Health Shorter Day Corn Double Cropping Practices**

| Positive Effects | | | | Negative Effects | | | |
|---|---|---|---|---|---|---|---|
| Increase in Income | | | | Decrease in Income | | | |
| Item | per acre | acres | total | Item | per acre | acres | total |
| Feed value of Haylage @ $70/ton/acre (UVM) | 3 | 50 | $10,500 | Feed value of Corn Sileage ($40/ton of sileage loss -UVM trials) | 2/ton | 50 | $4,000 |
| RCPP Foregone income payment | $ 53.00 | 50 | $2,650 | | | | |
| No Till Payment | $16.20 | 50 | $810 | | | | |
| Total Increased Income | | | $13,960 | Total Decreased Income | | | $4,000 |
| Decrease in Costs | | | | Increase in Costs | | | |
| Increased soil cover with increased cover crop growth reduces an estimated .6tons/ac of soil nutrient losses from erosion (RUSLE2 and AFLT NY case study) | $ 0.65 | 50 | $ 32.50 | Cost of Harvesting Cover Crop as forage (AFLT NY case study) | $75 | 50 | $3,750 |
| | | | | Spring Nitrogen Application (Jeff Sanders $700/ton) | 50lbs | 50 | $875.00 |
| Total Decreased Cost | | | $ 32.50 | Total Increased Cost | | | $4,625.00 |
| Annual Total Increased Per Income | | | $13,928 | Annual Total Decreased Per Income | | | $8,625.00 |
| Annual Per Acre Increased Net Income | | | $279 | Annual Per Acre Decreased Net Income | | | $172.50 |
| Annual Change in Net Income | $5,302.50 | | | | | | |
| Annual Change in Per Acre Net Income | $106.05 | | | | | | |


Program Contacts :

Orleans County NRCD Manager Sarah Damsell 802-334-6090 x7008


Orleans County Conservation District

USDA

University of Vermont Extension
Cultivating Healthy Communities