A Progressive Perspective:
A farmer panel discussion with Mark Anderson and George Foster

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Roller Crimping Cover Crops: Considerations

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University of Vermont Extension
*Rolling.crimping.cover.crops

## Roller crimping sequesters nitrogen

<table>
<thead>
<tr>
<th>Cover crop</th>
<th>Cover crop</th>
<th>Tillage</th>
<th>Corn planting</th>
<th>N topdress*</th>
<th>Corn harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>termination method</td>
<td>date</td>
<td>type</td>
<td>Date</td>
<td>lbs/acre</td>
<td>date</td>
</tr>
<tr>
<td>No cover crop (control)</td>
<td></td>
<td>Plow &amp; disk</td>
<td>13-May</td>
<td>70</td>
<td>6-Oct</td>
</tr>
<tr>
<td>Plow under</td>
<td>6-May</td>
<td>Plow &amp; disk</td>
<td>13-May</td>
<td>66</td>
<td>6-Oct</td>
</tr>
<tr>
<td>Herbicide burn-down</td>
<td>6-May</td>
<td>No-till</td>
<td>13-May</td>
<td>70</td>
<td>6-Oct</td>
</tr>
<tr>
<td>Rolled &amp; crimped</td>
<td>1-Jun</td>
<td>No-till</td>
<td>1-Jun</td>
<td>140</td>
<td>21-Oct</td>
</tr>
</tbody>
</table>

Figure 2. Soil nitrate N of cover crop termination strategies from late April to mid-July.

## Roller crimping can impact yields

Roller crimping results in increased biomass

<table>
<thead>
<tr>
<th>Cover crop termination method</th>
<th>Cover crop</th>
<th>Cover crop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dry matter</td>
<td>tissue nitrogen</td>
</tr>
<tr>
<td></td>
<td>tons/acre</td>
<td>% lbs/acre</td>
</tr>
<tr>
<td>No cover crop (Control)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rolled &amp; crimped</td>
<td>3.10*</td>
<td>1.57</td>
</tr>
<tr>
<td>Herbicide burn-down</td>
<td>1.84</td>
<td>2.93*</td>
</tr>
<tr>
<td>Plow under</td>
<td>1.73</td>
<td>3.02*</td>
</tr>
<tr>
<td>LSD (0.10)**</td>
<td>0.26</td>
<td>0.242</td>
</tr>
</tbody>
</table>

Roller crimping armors the soil

[Image of a tractor with a roller crimper]
Mark’s Farm
Landview Farm LLC
Partnership between the Walker Family and Mark Anderson
Located near Bennington VT, in White Creek NY
Milk 1400 cows, 1120 heifers
Cropping operations on 2400 acres
1300 acres corn (90+% cover cropped)
1100 acres hay crop
650 acres grass
300 acres alfalfa
150 acres sudangrass for heifers
Began rolling/planting in Spring 2015

Rolling/planting are two separate operations. 30' land roller with 42" drums, followed by a 12 row planter going the same direction.

2019 tried terminating rye at planting, rolling after corn emerged.
THE FARMSTEAD (MARK)
Roll Plant
Plant 1st, spray, roll after emergence
Plant, Spray, Roll at V-2
Plant 1st, Roll after, Same Day
George's Farm

George and his son Jeremy run the cropping side of Foster Bros. farm in Middlebury, VT.

Milk 480 cows, 350 heifers

Cropping operations on 1650 acres

- 550 acres corn (100% cover cropped)
- 250 soy beans
- 80 acres small grains (rye)
- 770 hay ground

Began no-tilling 2012
Built Roller Crimper in 2017
The Farmstead Foster Bros.
Always Learning

George Foster,
Foster Brothers Farm Inc.

Foster Bros. Farm, Middlebury
The roller crimper
Planting Green
Kinze Planter No-Till Setup
Roller Crimping Planting one pass
SYSTEM WORKS FOR BEANS
Roller Crimp Strategies

Tip #1
Lay it Flat
“Roll rye at pollination so it stays flat, vegetative rye will stand back up.”
“Thicker stands of rye will stay flat better than thinner ones.”
“Get tall covers flat on the ground, so corn is not shaded” Mark Anderson

Tip #2
Plan extra time for planting, “The roller crimper slowed up corn planting a little due to it limitations to highway travel.” George Foster
Progressive tips to promote profits

Fertility, Planting, and Termination in a Roll/Crimp System

Tip #3
“Add 60+ lbs. of nitrogen at planting” Mark Anderson
“Add additional liquid N at planting time” George Foster

Tip #4
“Planting green helps reduce sidewall compaction when planting corn into wetter soils.” George Foster

Tip #5
“Minimum 2 inch planting depth, aloe for thickness of the rolled rye” Mark Anderson

Tip #6
“Plan on using herbicide to terminate rye.” Mark Anderson
Equipment Strategies

Tip #7
“Properly designed and adjusted row cleaners, get the rye out of the row, soil will warm faster.”
Mark Anderson

Tip #8
“Heavy Covers necessitated the need to fabricate a 30’ roller crimper…”
George Foster

Tip #9
“Get the furrow closed, watch your closing system”
Mark Anderson

Tip #10
“Planting green, row cleaners, and rolling the cover crop in the same direction help to reduce closing wheel wrapping.”
George Foster
Other Considerations

Tip #11
“Planting into Green cover crops, soil is mellow.” Mark Anderson

Tip #12
“Plant covers early as possible in the fall, for maximum spring growth, Rye matures quickest.” Mark Anderson

Tip #13
“Rye is the most tolerate to manure applications in fall.” Mark Anderson
Results Matter
Mark Anderson’s Farm
The use of No-till and planting green into Cover crops has allowed us to successfully plant AND harvest corn over a wide range of soil conditions. Above ground, cover crops protect our soil from the elements, and helps create a habitat for beneficial insects. Below ground, the living roots maintain an environment that helps sustains the soil biology. As a result, we have seen improvement in the soil tilth and overall health of our soils. This has led to lower input cost, and higher yields. Going forward, we believe healthy soils are the key to profitably growing forages for our herd.

George Foster’s Farm
On our less than desirable clay soils we found that cover cropping and notill planting helps them to be more productive in all weather conditions and our sandy soils hold more moisture during dry spells. Our fall harvest is more efficient and less muddy on our clay soils.