



# PREVENTED PLANTING SEED OPTIONS

## MAY / JUNE 2019

- Check herbicide planting/rotation restrictions before planting.
- Determine objective(s):
  - » **Objective 1: Minimize Cost (page 1)**
  - » **Objective 2: Nutrient Capture/Retention; Building Soil (page 2)**
  - » **Objective 3: Nitrogen-Fixation / Building Soil (page 3)**
  - » **Objective 4a: Forage Production with 35% of Prevented Planting Benefit (may harvest before Nov 1.) (pages 4-6)**
  - » **Objective 4b: Grazing or Possible Hay Production with Full Prevented Planting Benefit (harvest after Nov 1.) (pages 7-8)**
- All options below will help suppress weeds. Watch for any weed escapes and keep option available to mow these seedings.
- Planting date guidelines below are for far southern Minnesota. Adjust dates for your latitude.

### OBJECTIVE 1: MINIMIZE COST

			Cost/Acre
<b>Oats*</b>			
<b>Planting</b>	Seed 1-1½ bu/A after July 15		<b>\$9 - \$16</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Relatively fool-proof</li> <li>• Fast growing</li> </ul>	<b>Cons</b> <ul style="list-style-type: none"> <li>• Mowing or spraying may be necessary to prevent grain production</li> </ul>	
<b>Annual Ryegrass*</b>			
<b>Planting</b>	Seed 10-20 lbs/A after July 15		<b>\$10 - \$21</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Rapid ground cover</li> <li>• Excellent root structure</li> </ul>	<b>Cons</b> <ul style="list-style-type: none"> <li>• More difficult to seed than oats: thin, light seed must be seeded shallower than oats at ¼" to ½" and have good soil contact.</li> <li>• Vigor will suffer in hot, dry weather</li> <li>• May overwinter</li> </ul>	
<b>Dwarf Essex Rape</b>			
<b>Planting</b>	Seed 4-5 lbs/A. Must be seeded after July 15 to avoid flowering and potential seed set.		<b>\$9 - \$16</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Economical</li> <li>• Can capture applied nutrients</li> <li>• Provides leafy growth</li> </ul>	<b>Cons</b> <ul style="list-style-type: none"> <li>• Vigor can suffer in hot weather</li> <li>• Avoid saturated soils</li> </ul>	
<b>Proso Millet</b>			
<b>Planting</b>	Seed 20 - 30 lbs/acre: drilled or broadcast. Can be seeded in June or July.		<b>\$8 - \$12</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Finer-leaved than sorghum-sudan</li> </ul>	<b>Cons</b> <ul style="list-style-type: none"> <li>• Coarser quality than Japanese millet</li> <li>• Viable grain can become a weed</li> <li>• Will provide a single cutting; very little regrowth</li> </ul>	

\* Organic seed options available. Call for prices.



**OBJECTIVE 2: NUTRIENT CAPTURE/RETENTION; BUILDING SOIL**

		Cost/Acre
<b>Oats* or Annual Ryegrass + Cover Crop Radish</b>		<b>\$15 - \$18</b>
<b>Planting</b>	Seed ½-1½ bu/A (oats) <u>or</u> 6-10 lbs/A (annual rye) and 2-4 lbs/A (radish) after July 15.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Good scavenger of N and other nutrients</li> <li>• Residue decomposes over winter</li> <li>• Ryegrass will outperform oats on wet ground</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Differential seeding depth needed: Seed oats 1 to 1½" deep; annual ryegrass &amp; cover crop radish ¼" to ½"</li> <li>• Radish roots may reach drainage tile lines</li> </ul>	
<b>SummerMax CC6*</b> Buckwheat, cowpeas, sorghum-sudangrass, proso millet, Sunn hemp, & sunflower		<b>\$30 - \$38</b>
<b>Planting</b>	Seed 40-50 lbs/A; drilled or broadcast. Must be seeded after July 15 to avoid flowering and potential seed set. Must add cowpea and Sunn hemp inoculants for reliable nitrogen fixation. Mow at first sign of flowering in buckwheat to avoid volunteer buckwheat.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Diverse mix of six species from four plant families</li> <li>• Scavenges nutrients</li> <li>• Fixes some N</li> <li>• Will winterkill</li> </ul>	
<b>Cons</b>	• Buckwheat may volunteer if allowed to seed.	
<b>Sorghum-Sudangrass Hybrids*</b>		<b>\$15 - \$37</b>
<b>Planting</b>	Seed 20-30 lbs/A June 1 through July 15	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Tremendous biomass potential</li> <li>• Can be stockpile grazed two weeks after hard frost after Nov.1.</li> <li>• Winterkills</li> </ul>	
<b>Cons</b>	Difficult to no till through next spring without removing some growth or tilling in residue	

\* Organic seed options available. Call for prices.



**OBJECTIVE 3: NITROGEN-FIXATION / BUILDING SOIL**

Cost/Acre

Cover Crop Radish* + Crimson Clover*		\$17 - \$30
<b>Planting</b>	Seed 4-5 lbs/acre Radish; 7-8 lbs/A Crimson clover: drilled or broadcast. Must be planted after July 15th to avoid flowering and potential seed set.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Scavenges nutrients</li> <li>• Fixes N</li> <li>• Improves soil health and tilth</li> <li>• Will winterkill</li> </ul>	
<b>Cons</b>	• Produces less biomass than a mix including a grass/small grain	
NitroMax CC1* — Oats, field peas, radish		\$36-\$48
<b>Planting</b>	Seed 75-100 lbs/acre: drill for best results. Must be planted after July 15th to avoid flowering and potential seed set. If peas not a regular component of rotation in specific field, must add pea inoculant for reliable N fixation.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Diverse mix of three plant families</li> <li>• Puts on major growth after temperatures cool in late summer</li> </ul>	
<b>Cons</b>	• None noted	
Crimson Clover* + Oats*		\$23 - \$28
<b>Planting</b>	Seed 2 – 16 lbs/acre crimson; 1 bu/A oats. Drilled or broadcast June-August.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Fixes N</li> <li>• Ease of planting</li> <li>• Will winterkill</li> </ul>	
<b>Cons</b>	• Higher seed expense, not frost tolerant	
Berseem Clover* + Oats*		\$31 - \$35
<b>Planting</b>	Seed 10-12 lbs/acre berseem; 1 bu/A oats, drilled or broadcast June-August.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Fixes N</li> <li>• Ease of planting</li> <li>• Good mixed with ryegrass or oats</li> <li>• Will winterkill</li> </ul>	
<b>Cons</b>	• Clover will struggle in hot/dry weather, be sure to cut before flowering (will not regrow after flowering).	
Yellow Blossom Sweet Clover* + Oats*		\$22 - \$29
<b>Planting</b>	Seed 8–12 lbs/acre sweet clover: drilled or broadcast and ½ to 1½ bu oats/A. Can be seeded June-August.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Vigorous growth of sweetclover the second year.</li> <li>• Excellent N-fixing capability</li> <li>• Great plowdown before corn</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Sweet clover includes some hard seed</li> <li>• Will struggle in hot, dry weather</li> </ul>	

\* Organic seed options available. Call for prices.



## OBJECTIVE 4A: FORAGE PRODUCTION BEFORE OR AFTER NOV. 1

For full prevented planting payments, do not harvest forage until after November 1. Harvesting forage before November 1 will limit insurance payments to 35 % of the potential payment and will lower the APH. Talk to your crop insurance agent before deciding to harvest.

These planting options, planted in late June or July are best suited for harvest before November 1.

For harvesting AFTER November 1, delay planting until August 1.

Baleage / Green Chop /Silage**		Cost/Acre
<b>Forage Sorghum (BMR or Non-BMR)</b>		
<b>Planting</b>	Seed 8 lbs/acre (corn planter) - 15 lbs/acre (drilled). Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$13 - \$24</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• More tonnage than any other option</li> <li>• Likes heat &amp; can handle dryness</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Limited protein and energy</li> <li>• Coarse feed if cut beyond boot stage</li> </ul>	
<b>Sorghum Sudan (BMR or Non-BMR)</b>		
<b>Planting</b>	Seed 15-25/acre; drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$12-\$42</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Lots of tonnage</li> <li>• Likes heat &amp; can handle dryness</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Limited protein and energy</li> <li>• Coarse stalks but finer than forage sorghum</li> </ul>	
<b>Piper Sudangrass</b>		
<b>Planting</b>	Seed 20-30 lbs/acre: drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$19 - \$28</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Finer quality and better forage than sorghum or sorghum-sudan</li> <li>• Likes heat &amp; can handle dryness</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Slightly lower tonnage than sorghum &amp; sorghum-sudan</li> <li>• Difficult to make for dry hay in the cool fall</li> </ul>	

\*\* All the sorghums, sudangrasses, & sorghum-sudans have the potential to cause Prussic Acid poisoning after a freeze. All annual forages have the potential to cause nitrate poisoning in high fertility soils under drought conditions.



**OBJECTIVE 4A: FORAGE PRODUCTION BEFORE OR AFTER NOV. 1, *continued***

Dry Hay / Baleage / Green Chop / Silage		Cost/Acre
<b>Pearl Millet (BMR or Non-BMR)</b>		
<b>Planting</b>	Seed 15-20 lbs/acre: drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$17 - \$26</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Lots of tonnage</li> <li>• Finer quality than sorghum-sudan</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Coarser forage</li> <li>• Lower quality than Japanese millet</li> </ul>	
<b>Japanese Millet</b>		
<b>Planting</b>	Seed 25–35 lbs/acre: drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$20 - \$27</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Lots of tonnage</li> <li>• Finer leaf and stem than pearl millet or sorghum-sudan</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Big windrows can be hard to dry</li> <li>• Does better on fertile ground with adequate moisture</li> </ul>	
<b>Foxtail (German/Siberian) Millet</b>		
<b>Planting</b>	Seed 20–25 lbs/acre: drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$16 - \$20</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Very fast growing, single-cut</li> <li>• Ready to cut in 60 days</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Little or no regrowth after single cutting</li> <li>• Lower quality than Japanese &amp; Pearl</li> <li>• Limited availability</li> </ul>	
<b>Proso Millet</b>		
<b>Planting</b>	Seed 20 – 30 lbs/acre: drilled or broadcast. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1.	<b>\$8 - \$12</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Finer-leaved than sorghum-sudan</li> <li>• Fast growing; single cut</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Coarser quality than Japanese millet</li> <li>• Viable grain can become a weed</li> <li>• Little or no regrowth after single cutting</li> </ul>	
<b>Teff Grass</b>		
<b>Planting</b>	Seed 8-12 lbs/acre (coated seed): drilled, 1/8" to 1/4": deep. Seed in June or July for harvest BEFORE November 1; August 1-15 for harvest AFTER November 1. Pack after seeding.	<b>\$18 - \$26</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Fine-stemmed, summer-annual forage</li> <li>• High quality and easy to dry</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Lower tonnage than millets and sorghum-sudangrasses</li> <li>• Requires special attention to achieve packed seedbed and shallow seeding depth</li> </ul>	

\* Organic seed options available. Call for prices.



**OBJECTIVE 4B: GRAZING OPTIONS, POSSIBLE HAYING**

**GRAZING – Late Fall Forage Harvest Only After Nov. 1**

For most successful grazing or forage harvest after November 1, delay planting forage species until August. Later planting will delay plant development. May want another cover crop planted in early summer to suppress weeds before planting these options for late grazing.

**Cost/Acre**

<b>Turnips (Purple Top)*</b>		<b>\$6 - \$9</b>
<b>Planting</b>	Seed 4 – 6 lbs/acre: drilled or broadcast, ¼" to ½" deep. Plant August 1-15. Seed with 1 bu/A oats or other spring small grain to increase fiber content of the forage mix.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Economical</li> <li>• Can withstand several frosts</li> <li>• Highly palatable for fall grazing</li> <li>• Very high in protein, digestibility and low in fiber</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Too high in moisture for baling or chopping</li> </ul>	
<b>Turnips (Grazing)</b>		<b>\$8 - \$12</b>
<b>Planting</b>	Seed 4 – 6 lbs/acre: drilled or broadcast, ¼" to ½" deep. Plant August 1-15. Seed with 1 bu/A oats or other spring small grain to increase fiber content of the forage mix.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Excellent forage quality</li> <li>• Can withstand several frosts</li> <li>• Highly palatable for fall grazing</li> <li>• Very high in protein, digestibility and low in fiber</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Too high in moisture for baling or chopping</li> </ul>	
<b>Kale (Dwarf Siberian)</b>		<b>\$8 - \$14</b>
<b>Planting</b>	Seed 3-5 lbs/A: drilled or broadcast, ¼ to ½" deep. Plant August 1 – 15. Does not produce a swollen root, like turnip. Seed with 1 bu/A oats or other spring small grain to increase fiber content of the forage mix.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Best cold tolerance of the brassicas</li> <li>• Highly palatable for fall grazing</li> <li>• Excellent feed quality: high protein, low fiber, and high digestibility</li> <li>• Ready to graze in 70-90 days</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Too high in moisture for baling or chopping</li> </ul>	
<b>Forage Rape: Dwarf Essex or Barsica Forage Rape</b>		<b>\$3 - \$8</b>
<b>Planting</b>	Seed 3-5 lbs/acre. Must be planted after July 15th to avoid flowering and potential seed set. a. Seed with 1 bu/A oats or other spring small grain to increase fiber content of the forage mix	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Economical</li> <li>• Can capture applied nutrients, provides leafy growth</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Vigor can suffer in hot weather</li> <li>• Avoid saturated soils</li> </ul>	

\* Organic seed options available. Call for prices.



**OBJECTIVE 4B: GRAZING OPTIONS, POSSIBLE HAYING, *continued***

**GRAZING – Late Fall Forage after Nov. 1, *continued***

For most successful grazing or forage harvest after November 1, delay planting forage species until August. Later planting will delay plant development

		Cost/Acre
<b>Oats*</b>		
<b>Planting</b>	Seed 2-3 Bu./acre: drilled or broadcast. Plant in mid-August.	<b>\$18 - \$27</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Easy to grow</li> <li>• Most growers can handle the forage</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Not a big tonnage producer in the late season</li> </ul>	
<b>Winter Rye* / Winter Wheat* / Winter Triticale*</b>		
<b>Planting</b>	Seed 50-100 lbs/acre: drilled or broadcast. Plant in mid-August.	<b>\$16 - \$50</b>
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Winter annual forage</li> <li>• Provides good grazing/green chop deep into fall</li> <li>• Starts growth right away in the spring</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Will not produce much tonnage until spring of following year</li> <li>• Must be managed in the spring</li> </ul>	

\* Organic seed options available. Call for prices.



**OBJECTIVE 4B: GRAZING OPTIONS, POSSIBLE HAYING, *continued***

**POSSIBLE HAY PRODUCTION – Late Fall Forage (After Nov. 1)**

Plant mid-August for potential hay or stockpile grazing after November 1. Potential to make hay will vary depending on: fall growing conditions; whether or not a killing frost occurs before November 1; and drying conditions after November 1. May want another cover crop planted in early summer to suppress weeds before planting these options for late hay or grazing.

**Cost/Acre**

<b>Millets: Japanese or Foxtail</b>		<b>\$16 - \$27</b>
<b>Planting</b>	Seed 25 to 35 lbs/A August 1. Use for stockpile grazing or haying.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• May be able to bale after Nov. 1</li> <li>• Drying conditions will be poor, so may need to wait until a hard frost</li> <li>• No danger of prussic acid poisoning</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Quality of baled forage will be somewhere between that of average hay and straw, depending on fall growing conditions and frost date</li> </ul>	
<b>Italian Ryegrass</b>		<b>\$23 - \$46</b>
<b>Planting</b>	Seed 15 – 30 lbs/acre: drilled or broadcast. Plant in mid-August.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Very fine quality forage</li> <li>• Fair tonnage</li> <li>• Fast growth</li> <li>• Best for stockpiled grazing</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Likes to be planted early on good ground</li> <li>• August planting will impact drying &amp; forage yield</li> </ul>	
<b>Oat &amp; Peas* / Barley &amp; Peas*</b>		<b>\$36 - \$100</b>
<b>Planting</b>	Seed 100-200 lbs/acre: drilled or broadcast. Plant in mid-August; <b>use only if PP acres are released early.</b>	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Excellent forage quality &amp; tonnage</li> <li>• Can be grazed</li> <li>• Austrian winter peas or spring peas may be used</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Forage will take significant time to dry</li> <li>• Will winterkill</li> <li>• Standability may be an issue in late fall</li> </ul>	
<b>Sorghum Sudan (BMR or Non-BMR)</b>		<b>\$12-\$42</b>
<b>Planting</b>	Seed 15-25/acre; drilled or broadcast. Seed Aug. 1 - 15.	
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Lots of tonnage</li> <li>• Likes heat &amp; can handle dryness</li> <li>• May stand and hold quality for stockpile grazing</li> </ul>	
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Limited protein and energy</li> <li>• Coarse stalks but finer than forage sorghum</li> <li>• Must strip graze to avoid trampling. Possibility of prussic acid poisoning during or after frost. Don't graze during frost periods. Remove animals until one week after a killing frost, then resume grazing.</li> </ul>	

\* Organic seed options available. Call for prices.