



**1<sup>ST</sup> Choice Seeds®**  
*1<sup>st</sup> in Seed Quality.*

## Tillage RootMax®

### Annual Ryegrass

*Tillage RootMax® Annual Ryegrass is the premium annual ryegrass in today's marketplace. It has been screened and selected for winter hardiness, rooting depth, and especially it's later maturing characteristic. Growers can gain an extra week and a half to terminate it in the spring, when compared with cereal rye and most other annual ryegrass varieties. Also, Tillage RootMax® is a certified variety that assures the genetic purity of the seed. Certified genetic purity is a significant attribute that can make this variety easier to terminate in the spring because it produces more uniform growth.*

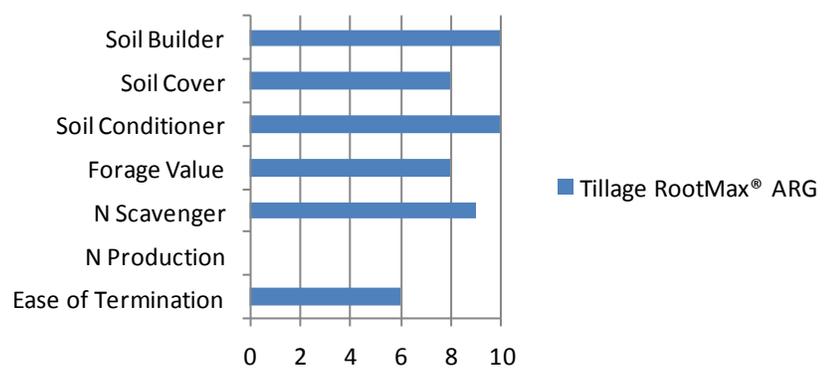
#### Characteristics:

- Tillage RootMax® is a deep root annual ryegrass that is an excellent nitrogen (N) scavenger. It over winters, keeping the soil covered. It improves soil structure and can store significant amounts of nutrients in addition to N.
- Tillage RootMax® variety is certified so growers are assured of the genetic purity of this seed.
- Compared to other ARG varieties Tillage RootMax® is easier to control in the spring. It matures later, giving growers an extra week and a half to terminate it in the spring, when compared with cereal rye and most other annual ryegrass varieties.
- The dense fibrous root mass of Tillage RootMax® can grow to depths of 36 inches or more depending on soil type and growing conditions. Its root type adds organic matter and introduces air and water to deeper layers in the soil profile than other cover crop choices.

#### Management Tips:

- **Planting:** Plant 3-10 weeks prior to the first killing frost.
- **Seeding Depth:** 3/8"-0.5" Comparable Seed on Drill Chart; Tall Fescue (reduce by 20%), Crested Wheat Grass (reduce by 10%) or Annual Ryegrass
- **Seeding Rate:**
  - For Cover Crop by Drill (7.5" rows) 12 lbs/acre
  - Broadcast/Aerial Seeding: 15-18 lbs/acre
  - For Forage by Drill or Broadcast: 18-30 lbs/acre
  - Precision Planting (15" with 1.5" in-row): 10 lbs/acre

#### Tillage RootMax® ARG



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

#### Control:

- Applying two quarts/acre of glyphosate before jointing in the spring. Best burndown is achieved by spraying on a warm day between 9am-4pm with water adjusted to 5.5 pH.



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## TillageMax Dover®

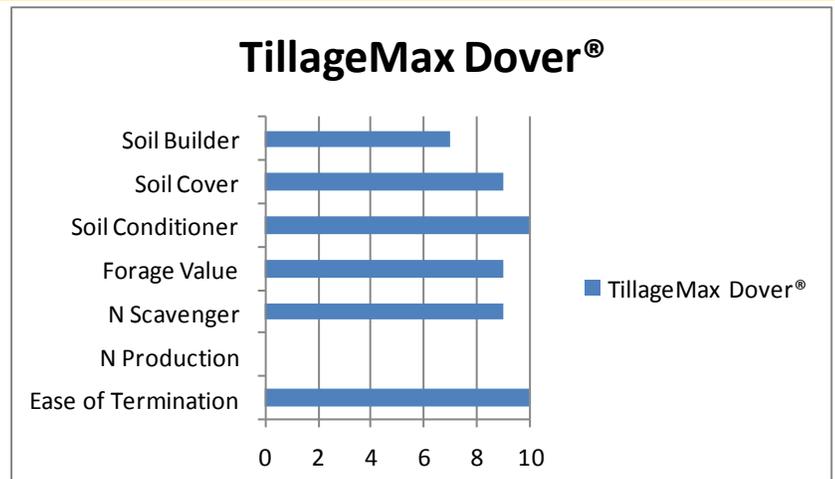
*TillageMax Dover® is the highest premium radish/oats blend available. It combines two excellent fall N scavengers- Tillage Radish® and Oats. The cool season growth and diverse rooting types of these two species lead to superior fall N uptake, which reduces N losses from the soil over the winter and early spring. Winter termination of both the oats and radishes in our geography benefit a lower management strategy on this mix. Tillage Radishes can grow deep taproots. Oats have a high density of fibrous roots. These two species make the perfect couple resulting in great nutrient uptake and compaction alleviation.*

### Characteristics:

- The superior genetics of the Tillage Radish® are in this mix! Dover™ is the industries premium oats/radish mix.
- Dover™ has rapid fall growth and easy winter termination when temperatures drop below 20°F. Residue begins to break down when soils start to warm resulting in is less residue with Dover™ at planting.
- Dover™ has potential for very high fall nutrient uptake compared to other mixes when planted early and when plenty of nutrients are available.
- Oats scavenge N at rates comparable to cereal rye and AGR. With winter termination the N that is captured is more readily available than spring terminated cover crops for most environments.
- Dover™ can be excellent forage alternative for beef and dairy.

### Management Tips:

- **Planting:** Plant 3-10 weeks prior to the first freeze.
- **Seeding Depth:** ½ - 1" Comparable Seed on Drill Chart is Oats.
- **Seeding Rate:**
  - Cover Crop by Drill (7.5" rows) 25 lbs./acre
  - Broadcast/Aerial Seeding: 30 lbs./acre
  - For Forage by Drill or Broadcast: Add 50 lbs. of Oats for each unit of Dover™ and increase total seeding rate to 40-50 lbs. /acre
  - Precision Planting (15" with 5" in-row spacing): 20 lbs./acre



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

- Winter kills with 3 nights in the mid-teens. If Tillage Radish® or Oats does not winter kill, apply a combination of one pint/acre of 2,4-D along with one quart/acre of glyphosate at flowering or heading.



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## Winter Hawk Annual Ryegrass

*Winter Hawk Annual Ryegrass represents the best annual ryegrass for winter hardiness as measured at the Ohio State cover crop trials. This variety breaks dormancy evenly in the spring and has shown to be a huge biomass builder and improve soil tilth. Winter Hawk Annual Ryegrass scavenges and holds nutrients through the fall and spring and is an excellent choice to help alleviate soil compaction.*

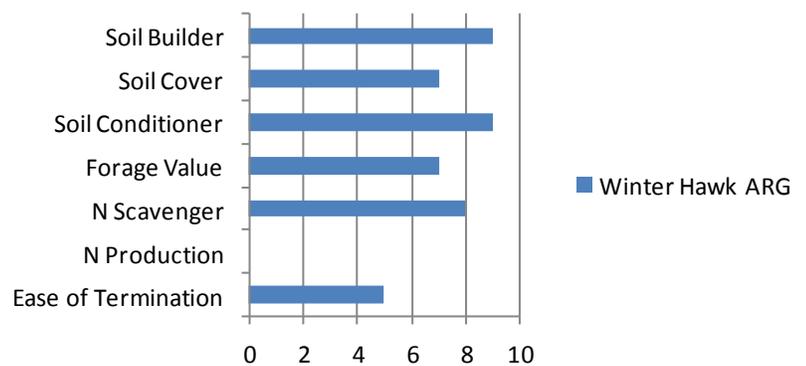
### Characteristics:

- Winter Hawk is a diploid annual ryegrass that is known for its versatility on fertile well drained soils as well as poorly drained soils. It is fast emerging and establishes itself in a variety of soil and growing conditions.
- Winter Hawk breaks dormancy evenly in the spring. It is an excellent nitrogen (N) scavenger. Because of its large biomass it can also store significant amounts of other nutrients in addition to N.
- This variety's claim to fame is its excellent winter hardiness. This variety was number one in winter hardiness at The Ohio State cover crop trials.
- Winter Hawk is deep rooted which makes it an excellent soil conditioning cover crop. Roots have been found over 40" deep. Keep in mind that root growth takes time and if your goal is to break soil compaction, plant at the earliest opportunity in the planting window to maximize this benefit.

### Management Tips:

- **Planting:** Plant 3-10 weeks prior to the first killing frost.
- **Seeding Depth:** ¼" Comparable Seed on Drill Chart; Tall Fescue (reduce by 20%), Crested Wheat Grass (reduce by 10%) or Annual Ryegrass
- **Seeding Rate:**
  - Cover Crop by Drill (7.5" rows) 10-12 lbs./acre
  - Broadcast/Aerial Seeding: 15-18 lbs./acre
  - Forage by Drill or Broadcast: 20-24 lbs./acre
  - Precision Planting (15" with 1.5" in-row): 9-10 lbs./acre

### Winter Hawk ARG



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

Control is best accomplished when the plant is small, 6-9" in height, and before the first node has developed. Warm temperatures and actively growing plants are a must for control. Apply two quarts/acre of glyphosate before jointing. Best burndown is achieved by spraying on a warm day between 9am-4pm with water adjusted to 5.5 ph.



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## 1st Choice Seeds Earth Reserve Mix

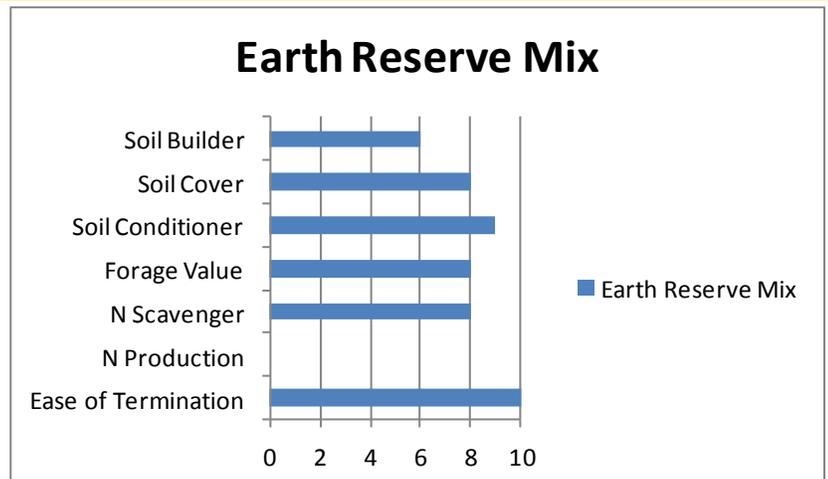
*Our Earth Reserve Mix is a blend of our high quality oat seed plus our proven premium radish designed to scavenge and hold nutrients in your fields. Earth Reserve Mix winterkills for easy management and will build soil organic matter. This great blend can provide prolific forage if required and is an excellent cover for weed suppression.*

### Characteristics:

- Earth Reserve is appropriately named for what it is designed to do in your fields. This mix scavenges Nitrogen (N) and other available nutrients and stores them up in the plant tissue for your next crop.
- Earth Reserve is very fast to establish in the fall so it is a favored option when quick cover is needed. It can follow open wheat acres late summer or can be seeded into standing crops. It is a good candidate for aerial application. Avoid planting too late in the season.
- This mix will winter kill when temperatures drop below 20°F. The residue begins to break down when soils begin to warm in early spring. Your following crop can be planted into the mulch that Earth Reserve leaves behind.
- Oats scavenge N at rates comparable to cereal rye and AGR. With winter termination the N that is captured is more readily available than spring terminated cover crops for most environments.
- Earth Reserve can be an excellent forage alternative for beef and dairy.

### Management Tips:

- **Planting:** Plant 6 weeks before killing frost.
- **Seeding Depth:** ½ - 3/4" Comparable Seed on Drill Chart is Oats.
- **Seeding Rate:**
  - Cover Crop by Drill (7.5" rows) 40-45 lbs./acre
  - Broadcast/Aerial Seeding: 50 lbs./acre
  - For Forage by Drill or Broadcast: Not less than 50 lbs. /acre
  - Precision Planting (15" with 5" in-row spacing): 35-45 lbs./acre



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

Winter kills with 3 nights in the mid-teens. If Earth Reserve does not winter kill, apply a combination of one pint/acre of 2,4-D along with one quart/acre of glyphosate at flowering or heading.



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## 1st Choice Seeds

### NBank Mix

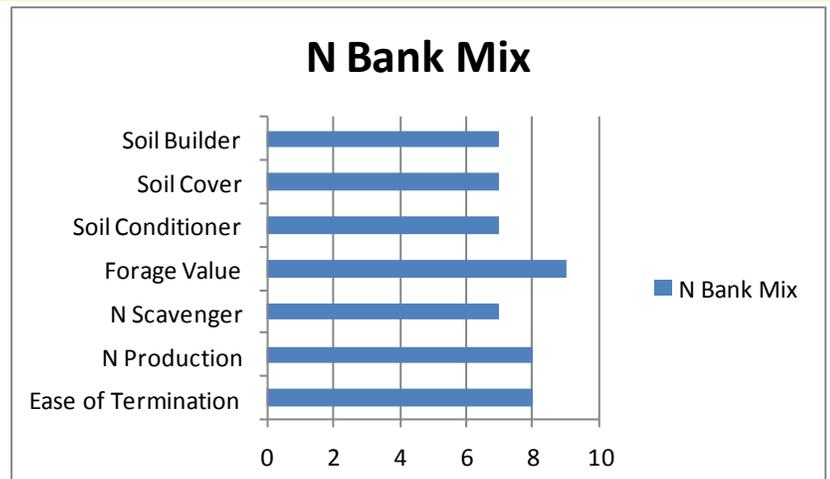
*NBank Mix is a Nitrogen producer (legume) blended with a nutrient scavenger (brassica). Our NBank Mix combination not only captures and fixes Nitrogen, it can have quick nutrient release in the spring giving this cover crop a high possibility of producing a nutrient credit for your next crop. This blend is our improved Crimson Clover mixed with our proven premium radish. Crimson Clover contributes a fine, fibrous root system and usually overwinters. Clover is easy to terminate in the spring. The radish will winterkill below 20°F. NBank is best planted after wheat and is an excellent choice before corn.*

### Characteristics:

- Our NBank blend of improved Crimson Clover and proven premium radish is a great combination that captures nutrients, fixes Nitrogen (N) and provides quick nutrient release for your next crop.
- NBank is a great option for Cover Crop beginners. The radish in NBank winter terminates. Crimson Clover is relatively easy to control and spring terminate.
- Crimson Clover can grow under the canopy of other species like our premium radish in the NBank mix.
- Our premium radish in this mix has a deep tap root. The Crimson Clover contributes a fine fibrous root system. These species complement each other in N production and N scavenging.
- NBank is excellent for building soil tilth and structure.

### Management Tips:

- **Planting:** Plant 6 weeks before killing frost.
- **Seeding Depth:** ¼" – ½" Comparable Seed on Drill Chart is Alfalfa.
- **Seeding Rate:**
  - Cover Crop by Drill (7.5" rows) 20 lbs./acre
  - Broadcast/Aerial Seeding: 24 lbs./acre
  - Forage by Drill or Broadcast: 25-35 lbs. / acre
  - Precision Planting (15" with 5" in-row spacing): up to 20 lbs./acre



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

- Radish will winter kills with 3 nights in the mid-teens. Control Crimson Clover with a spring burndown combination of one pint/acre 2,4-D along with one quart/acre of glyphosate.



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## 1st Choice Seeds

### LandCache Mix

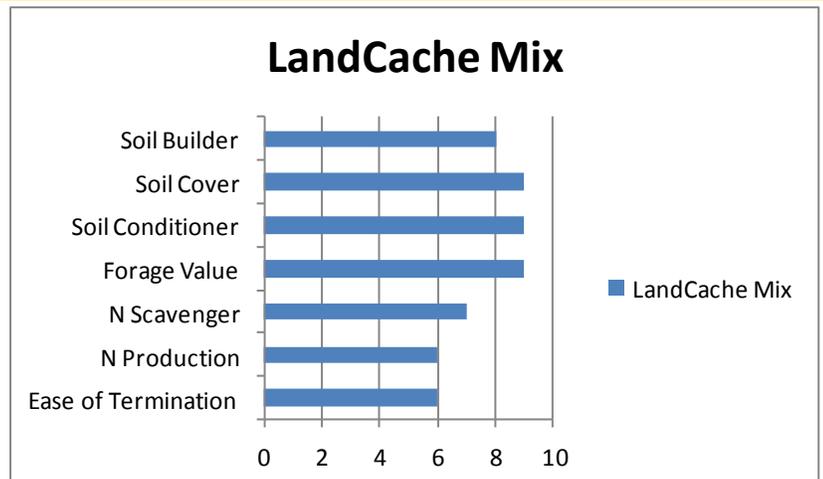
*LandCache Mix is our three way blend combining winterhardy annual ryegrass, improved crimson clover and our proven premium radish. The diverse rooting types lead to great fall and spring nitrogen uptake and can reduce nitrogen losses over the winter and early spring. The radish will winter terminate. Our crimson clover and annual ryegrass allow a wider window for control in the spring than cereal rye.*

### Characteristics:

- Our LandCache blends winter hardy Annual Ryegrass, improved Crimson Clover and proven premium radish. The diversity of these three plant families build soil structure, produce Nitrogen (N) and scavenge (N).
- Slower nutrient release in the spring is a benefit contributed by this blend.
- LandCache can product high quality forage for grazing and can be ensiled in the spring. To improve forage quality and yield, increase fertilizer and the seeding rate.
- LandCache's premium radish winter terminates when temperatures drop below 20°F. Our blend with Crimson Clover and winter hardy Annual Ryegrass allow for a wider window of control than cereal rye.
- Our premium radish in this mix has a deep tap root. The Crimson Clover contributes a fine fibrous root system. The winter hardy Annual Ryegrass adds biomass with roots than can grow as deep as 40".

### Management Tips:

- **Planting:** Plant 3-4 weeks prior to first freeze.
- **Planting Depth:** ¾" – 1" Comparable Seed on Drill Chart is Tall Fescue (reduce by 25%) or Annual Ryegrass.
- **Seeding Rate:**
  - Cover Crop by Drill (7.5" rows) 20 lbs./acre
  - Broadcast/Aerial Seeding: 24 lbs./acre
  - For Forage by Drill or Broadcast: Add 50 lbs. of winter hardy Annual Ryegrass for each 50 lb. unit of LandCache and increase drilling rate to 24 lbs. / acre
  - Precision Planting (15" with 2" in-row spacing): 15 lbs./acre



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

- Radish will winter kill with 3 nights in the mid-teens. Burndown winter hardy Annual Ryegrass and Crimson Clover with two quarts/acre of glyphosate with one pint of 2,4-D/acre.



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## 1st Choice Seeds

### Cereal Rye

*Plant Seed-Not Grain. Our high quality Cereal Rye was monitored from planting, throughout the growing season and harvest. It has been professionally conditioned. Lots are tested after harvest by third party laboratories insuring our highest quality standards are maintained. Fall seeded cereal rye is the most common cover crop in our geography because of its immense fibrous root system and large amounts of spring biomass. Our Cereal Rye is a huge scavenger and relocater of nutrients. It helps suppress weeds and provides the latest planted cover crop option for our area.*

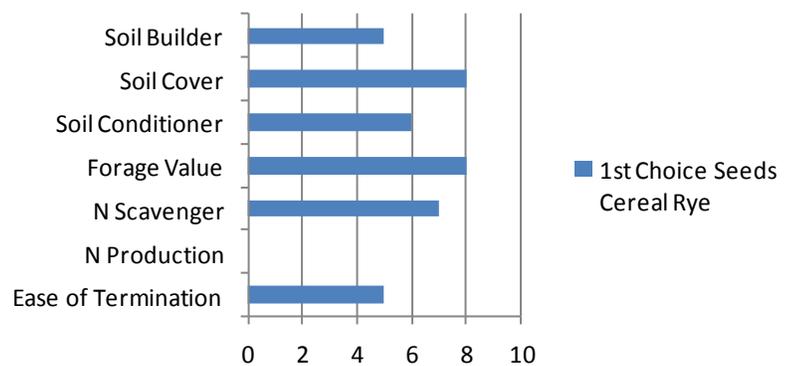
#### Characteristics:

- 1<sup>st</sup> Choice Seeds Cereal Rye can establish its stand in cool, late fall weather. It is the last chance cover crop for late fall planting.
- Our Cereal Rye is very fast growing and has a large root mass to scavenge nutrients from your fields. Seed earlier in the planting window to maximize the benefit of providing winter cover.
- 1<sup>st</sup> Choice Seeds Cereal Rye is outstanding for suppressing weeds early in the spring because rye has an allelopathy effect on weeds. But also keep in mind that it may also stunt the following corn crop.
- Cereal Rye is suitable for most soil types in our market area.
- Because of its fast growing nature and fibrous root mass Cereal Rye can add forage flexibility for the livestock farmer.

#### Management Tips:

- **Planting:** Plant September to early November.
- **Seeding Depth:** ¾" – 1" Comparable Seed on Drill Chart; Annual Ryegrass
- **Seeding Rate:**
  - For Cover Crop by Drill (7.5" rows) 56 lbs./acre
  - Broadcast/Aerial Seeding: 75-90 lbs./ acre
  - For Forage by Drill or Broadcast: 100 lbs./acre

#### 1st Choice Seeds Cereal Rye



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

#### Control:

- Control is best accomplished when the plant is small and before the first node has developed. Warm temperatures and actively growing plants are a must for control. Apply two quarts/acre of glyphosate before jointing. Best burndown is achieved by spraying on a warm day between 9am-4pm with water adjusted to



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## 1st Choice Seeds

### Triticale

*Our Triticale has good seedling vigor and is early to canopy development making this cover crop a great option for fall weed suppression. The benefit most growers are seeking is to improve their soil. Triticale typically has dense and deep roots that help break up surface compaction and protect vulnerable fields from soil erosion with late fall and early spring rains. It scavenges and holds nutrients. Its moderate spring early growth allows a longer window for control compared to other cover crop choices.*

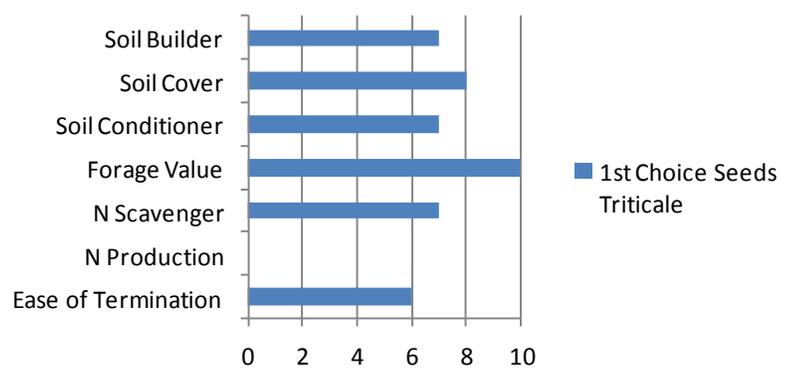
### Characteristics:

- 1<sup>st</sup> Choice Seeds Triticale is a cross between cereal rye and winter wheat. It has excellent winter hardiness and can establish itself late in the season.
- Triticale is a fast growing and a robust biomass producer. This species is great for winter grazing adding forage flexibility for the livestock farmer.
- Because of this varieties fast growing tendency in the fall, Triticale is superior for winter ground cover. and weed suppression.
- Triticale is a weed suppressor. It has an allelopathic effect on weeds and can also affect following corn crops. 1<sup>st</sup> Choice Seeds Triticale has a large root mass, grows deep roots, to scavenge nutrients from your fields.
- Triticale is easier to control than some other cover crop species in the spring due to its later maturity.

### Management Tips:

- **Planting:** Plant September to early November. Planting is similar to Cereal Rye.
- **Seeding Depth:** 1" to 1-1/2" Comparable Seed on Drill Chart; Wheat
- **Seeding Rate:**
  - For Cover Crop by Drill (7.5" rows) 56 lbs./acre
  - Broadcast/Aerial Seeding: 70-80 lbs./ acre
  - For Forage by Drill or Broadcast: 100 lbs./acre

### 1st Choice Seeds Triticale



Ratings: Superior 9-10 Excellent-8 Very Good -7 Good-6 Average-5 Below Average 0-4

### Control:

- Burndown Triticale with one quart/acre of glyphosate herbicide prior to boot stage. Triticale can also be mechanically controlled by mowing or flattening with a roller or crimper in the milk or dough stage.