

## Cover Crop Mixes- When talking about soil health!

Goals- Diversity! Roots, residue, aggregation, compaction, biologicals, nutrient cycling, synergies between species, spread risk

### Understanding your cover crops!

- Cool season grasses
- Warm season grasses
- Cool season broadleaves
- Warm season broadleaves
- Perennial
- Annual
- Biannual
- Tap root
- Fibrous root

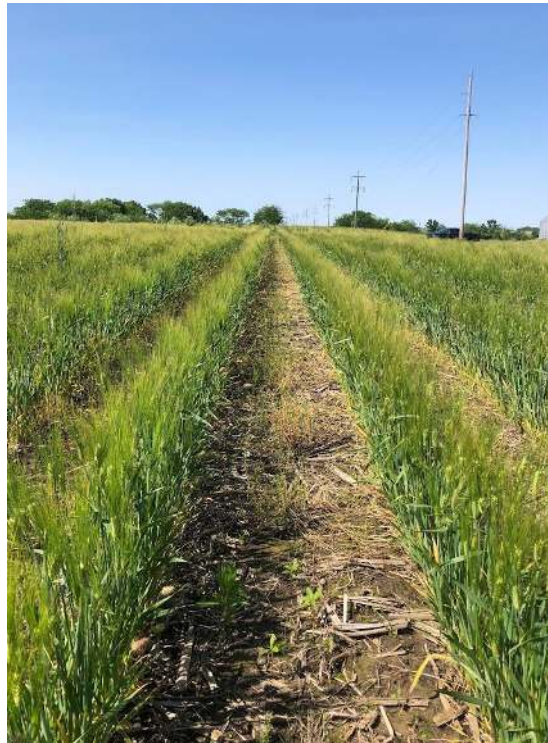






Cover Crop Mixes- Cool season grasses!

- ★ Annual Ryegrass
- ★ Cereal Rye
- ★ Barley
- ★ Oats- AMF
- ★ Winter Wheat
- ★ Triticale



Highlights

- ★ Scavenging nutrients
- ★ Reducing erosion
- ★ Produce large amounts of biomass
- ★ Suppress weeds
- ★ Higher in carbon
- ★ Fibrous root









Cover Crop Mixes- Warm season grasses!

- ★ Pearl Millet
- ★ Sorghum-Sudan Grass
- ★ Forage Sorghum



Japanese Millet



Highlights

- ★ Great for biomass production and weed control & erosion when ground would be fallow



Cover Crop Mixes- Cool season broadleaf!

- ✦ Oilseed Radish
- ✦ Turnip
- ✦ Kale and Collards



Highlights

- ✦ Taproot
- ✦ Biofumigation
- ✦ Pest suppression
- ✦ Nutrient management, may release N more readily





Cover Crop Mixes- Warm season broadleaf!

Aug 10, 2021

- ✦ Buckwheat
- ✦ Safflower
- ✦ Sunflower



Oct 8, 2019



Highlights

- ✦ Buckwheat is very effective at extracting phosphorus





Cover Crop Mixes- Cool season legumes!

- ★ Hairy Vetch
- ★ Crimson Clover
- ★ Winter Pea



June 5, 2019



May 31, 2019

Highlights

- ★ N source, kill a legume cover crop in the early to mid- blossom stage









Cover Crop Mixes- Warm season legumes!

- ✦ Cow Pea
- ✦ Sunhemp
- ✦ Chickpea
- ✦ Mungbean



Highlights

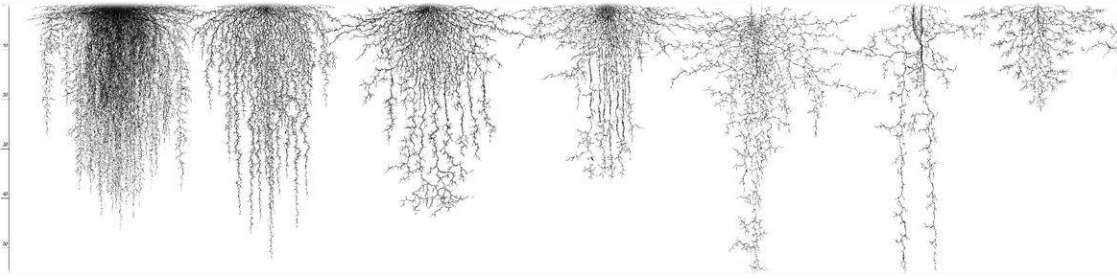
- ✦ Attract beneficial insects
- ✦ Shade tolerance



Cover Crop Mixes- Grass, Legume, Broadleaf





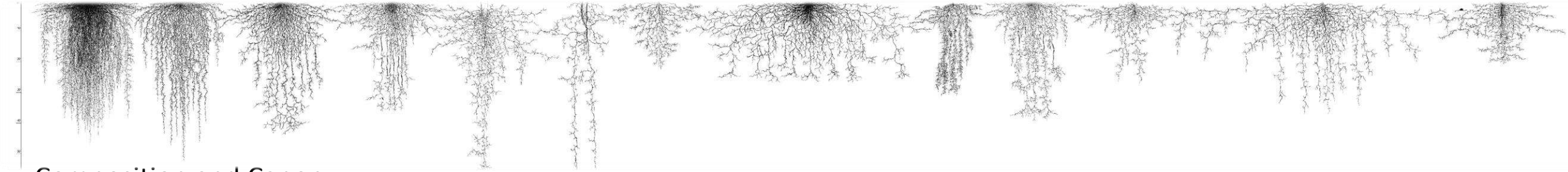


## Challenges

- Higher seed cost
- Complicated management
- Difficult to seed
- Establishment – overpower
- Weather
- Equipment







## Composition and Canopy

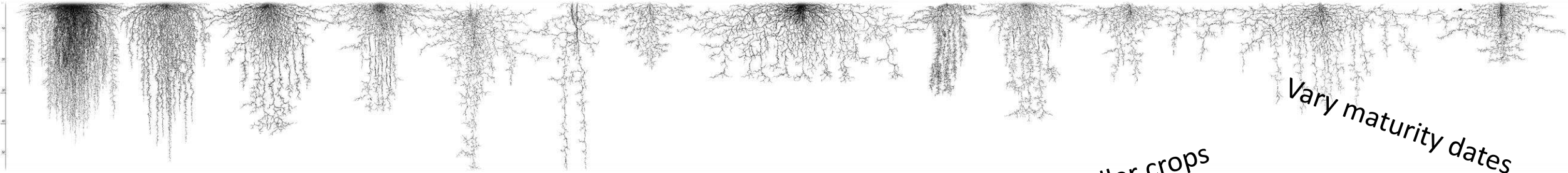


- Consider synergy
- The more we mix does not mean the more we apply
- Based on pounds per acre vs. seeds per square foot
- Hard to get the right mix



- Overwintering & winterkill
- High competitors- forage radish, canola, oats, sorghum sudan, cereal rye
  - Reduce below monoculture seeding rate
- Legume weak competitors, annual ryegrass sod type
- Vary on location, seeding method, goals, fertility, date, and objectives
- Rule of thumb- increase broadcasting





### What species to mix

- ✓ Choose your goals
- ✓ Understand timing
- ✓ 3-4 mix



Low-growing & taller crops

Vary maturity dates

Fast growing & slow growing

Nurse crop

Spread risk

Scavengers



## CC/Rapeseed

<u>Crop</u>	<u>Origin</u>	<u>Germ</u>	<u>PLS</u>
Barley	IN	90.00%	59.51%
Spring Oats	IL	85.00%	18.62%
Rapeseed	ID	85.00%	5.73%
Crimson Clover	OR	85.00%	2.53%

Oct 22





Dec 15





March 24



April 27







Aug 17







Oct 18



Nov 20



			Planting Rate	Aerial Re	Planting Depth	Planting Time
<b>Corn Champion Mix</b>	82% Dixie Crimson Clover, 15% GroundBuilder Radishes, and 3% Appin Turnips. Recommended ahead of corn.	<ul style="list-style-type: none"><li>▫ Produces large amounts of nitrogen</li><li>▫ Scavenges nitrogen and other nutrients</li><li>▫ Improves soil structure</li></ul>	16 lb./A.	20 lb./A.	1/4 - 1/2 in.	July - Sept.

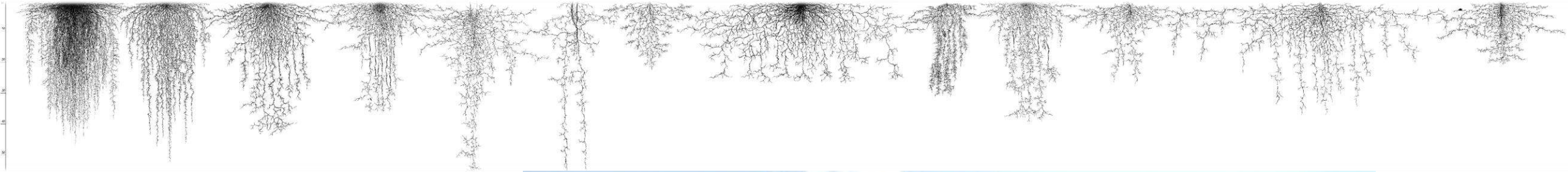




Nov 20







Summer cover crop:

12 lbs Buckwheat

5 lbs Sunn Hemp

1 lb Radish

1 lb Sunflower

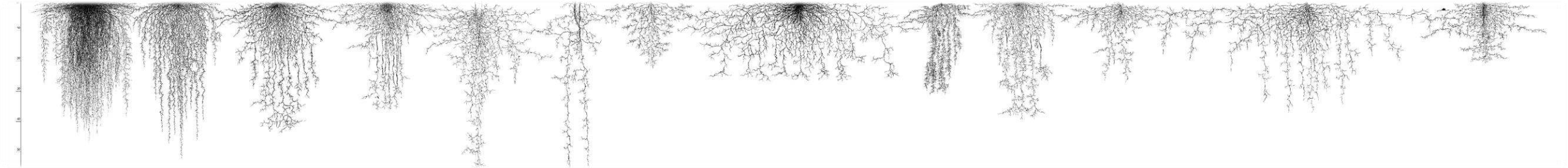
1 lb Okra

Planting date: July 6th



Aug 10  
2021





June 1  
2018








Oct 2  
2020



July 17  
2020





Aug 21,  
2020



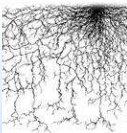


March 29  
2021





May 20

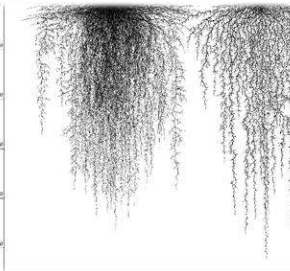




Oct 1







**DEER CREEK  
SEED Co.  
CUSTOM COVER CROP MIX**

**LOT: CCMX62490**

	PURITY
MEDIUM RED CLOVER (Variety not Stated)	24.85%
ALSIKE WHITE CLOVER (Variety not Stated)	12.37%
WINFRED FORAGE BRASSICA	12.45%
TROPHY RAPESEED	6.75%
SEMINOLE LADINO WHITE CLOVER	5.92%
FIXATION BALANSA CLOVER	12.19%

Other Crop: 0.01%      Inert Matter:  
Weed Seed: 0.07%      Tested:

NOXIOUS WEED SEED: NONE FOUND;  
Distributed by Deer Creek Seed, Inc. PO Box 100  
1-877-247-3736      www.DeerCreekSeed.com



**DEER CREEK  
SEED Co.  
CUSTOM COVER CROP MIX**

**LOT: CCMX62510**

JAPANESE MILLET (variety not stated)	
BUCKWHEAT (variety not stated)	
HAIRY VETCH (variety not stated)	
RED RIPPER COWPEA	
SUNN HEMP (variety not stated)	
PEREDOVIK SUNFLOWERS	

Other Crop: 0.01%      Inert Matter:  
Weed Seed: 0.01%      Tested:  
NOXIOUS WEED SEED: NONE FOUND;  
Distributed by Deer Creek Seed, Inc.



# Cover Crop Chart

**GROWTH CYCLE**  
 A = Annual  
 B = Biennial  
 P = Perennial

**PLANT ARCHITECTURE**  
 γ = Upright  
 \* = Upright-Spreading  
 ≡ = Prostrate

**RELATIVE WATER USE**  
 ☹ = Low  
 ☹☹ = Medium  
 ☹☹☹ = High

----- COOL -----

----- WARM -----

-- GRASS --      ----- BROADLEAF -----      -- GRASS --

A <b>BARLEY</b> γ							A <b>AMARANTH</b> γ	A <b>FOXTAIL MILLET</b> γ		
A <b>OAT</b> γ	A/B <b>CANOLA</b> ☹☹	A/B <b>CAMELINA</b> ☹☹							A <b>BUCKWHEAT</b> γ	A <b>PEARL MILLET</b> γ
A <b>WHEAT</b> γ	A/P <b>MUSTARD</b> *	A <b>PHACELIA</b> γ	----- LEGUME -----						A <b>QUINOA</b> γ	A <b>PROSO MILLET</b> γ
A <b>CEREAL RYE</b> γ	A <b>RADISH</b> *	A <b>FLAX</b> γ	A <b>FIELD PEA</b> ☹	A <b>BERSEEM CLOVER</b> γ	A/B <b>VETCH</b> ≡	A <b>COWPEA</b> *	A <b>CLUSTER BEAN</b> γ	A <b>CHICORY</b> *	A <b>GRAIN SORGHUM</b> γ	
A <b>TRITICALE</b> γ	B <b>TURNIP</b> *	A <b>KALE</b> ☹☹	A <b>LUPIN</b> γ	B/P <b>RED CLOVER</b> γ	A/B <b>SWEET CLOVER</b> γ	P <b>PIGEONPEA</b> ☹☹	A <b>MUNG BEAN</b> *	A <b>CUCURBITA</b> ≡	A <b>SUDAN GRASS</b> γ	
A <b>ANNUAL FESCUE</b> γ	B <b>BEET</b> *	A <b>SPINACH</b> *	A/P <b>MEDIC</b> *	P <b>WHITE CLOVER</b> ≡	P <b>SAINFOIN</b> γ	A <b>CHICKPEA</b> *	A <b>SOYBEAN</b> *	A <b>SAFFLOWER</b> γ	A <b>TEFF</b> γ	
P <b>SALINE TOLERANT</b> γ	A/B <b>CARROT</b> *	A/B <b>CHARD</b> *	P <b>ROUNDHEAD LESPEDEZA</b> γ	P <b>KURA CLOVER</b> ≡	P <b>ALFALFA</b> γ	A <b>FAVA BEAN</b> γ	A/P <b>PEANUT</b> *≡	A <b>SUNFLOWER</b> γ	A <b>CORN</b> γ	



# Managing Cover Crops Profitably

THIRD EDITION

