

How to Design Cover Crop Mixes for Improving Soil Health

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- **Farm 2500 acres in Nebraska**
- **18 million pounds of cover crop seed mixed (last 4 years)**
- **Majority in diverse mixes (more than 4 species – with over 60 species to choose from)**
- **100% custom mixed per customer order**

Why Diverse Cover Crop Mixes?

1. If Soil Health is the goal, Crop Diversity cannot be ignored or overstated
2. Plants were created to grow in diverse ecosystems
3. *Resilience* comes from *Diversity*
4. Balanced “diet” for soil biology
5. Balance: because even good things (legumes, brassicas) when not used in moderated balance can be harmful

Get 4 Things Right

1. The Right Species
2. The Right Inoculants
3. The Right Seeding Rates
4. The Right Seeding Time

Answer 4 Main Questions

- 1. What Are The Goals/Concerns?**
- 2. What Are The Environmentals?**
- 3. What Is The Timeframe?**
- 4. What Is The Budget?**

What are your Goals/Resource Concerns?

- 1. Soil health – biological life**
- 2. Supplemental grazing**
- 3. Increased fertility/organic matter**
- 4. Nitrogen capture/cycling**
- 5. Additional lasting residue/cover**
- 6. Weed suppression/disease cycle**
- 7. Erosion control**
- 8. Compaction breaking/deep roots**

What are your environmentals?

1. Rainfall or irrigation
2. Evapo-Transpiration (ET)
3. Growing season
4. Soil type and condition
5. Seeding method
6. Previous crop and next crop
7. Previous herbicides

What is your timeframe?

- 1. Spring** - fallow ground or prior to a spring crop
(chemical/mechanical termination)
(Check crop insurance implications!)
- 2. Early Summer** - Right after wheat harvest
(frost or chemical/mech. termination)
- 3. Late Summer** – Delay after wheat harvest
(frost termination)
- 4. Fall** - After fall crops
(frost termination or over-wintering)

What is your budget?

- 1. Low** (less than \$20/acre)
(Low seeding rates – very few legumes)
- 2. Medium** (\$20 - \$30/acre)
(Average seeding rates – some legumes)
- 3. High** (\$30 - \$40/acre)
(High seeding rates – high legume %)
- 4. Higher** (\$40 - \$60/acre)
(special use: organic N production,
nematode control, perennials, etc...)

What are your goals/resource concerns?

Generally speaking....

- 1. The more specific your goals/concerns, the less diverse your mixes will typically be.**
- 2. The tighter your planting windows, the fewer species will work and thus the less diverse your mixes will be.**

Welcome to SmartMix

Login to Start a Mix

- or -

Try as a guest



What is SmartMix?

The smartest mix of cover crops for **your field** is the one that you custom design for **your field**! That is the premise behind Green Cover Seed's powerful SmartMix Calculator 4.0. You choose your goals, we help you select the cover crops that meet the goals and we custom mix it just for you!

SmartMix is unique within the industry, with immediate feedback on price and goal fulfillment along with a suite of mix attributes, Powerful, Instructional, Interactive, and Visual, SmartMix 4.0 can help you make the smartest mix for your fields

See what's new in SmartMix 4!



Useful Charts

We have implemented charts



New Design

The new release of SmartMix



Improved Security

Protecting your information



Faster calculation

Our new calculator features

Login with your username and password

Username (Email)

Password

Login

[Register](#)

[Reset Password](#)

Start a Mix

Hello, Bladen, NE!

Based on your zipcode of: 68928, the average annual rainfall is 26.73". For your area, the First Frost is around 10/03, the Last Frost is around 04/30 and the Plant Hardiness Zone (PHZ) is 5b.

Details

Name Your Mix:

Acres to Plant:

Zipcode:

Bagging Option:

☒ Tote ☐ 50 lb bags ☐ Bulk

New!

Irrigation:

applied inches

Seeding Method:

-- Select --

Seeding Date:



09/01/2015

Next Cash Crop:

-- Select --

Termination Date:



Choose Date

Goals

Goal 1 (High Priority) Required

-- Select --

Goal 2 (Medium Priority)

-- Select --

Goal 3 (Low Priority)

-- Select --

Populate

Next

Start a Mix

Hello, Lincoln, NE!

Based on your zipcode of: 68512, the average annual rainfall is 30.52". For your area, the First Frost is around 10/13, the Last Frost is around 04/22 and the Plant Hardiness Zone (PHZ) is 5b.

Details

Name Your Mix:

Acres to Plant:

Zipcode:

Bagging Option:

☒ Tote ☐ 50 lb bags ☐ Bulk

New!

Irrigation:

applied inches

Seeding Method:

-- Select --

Seeding Date:



09/01/2015

Next Cash Crop:

-- Select --

Termination Date:



Choose Date

Goals

Goal 1 (High Priority) Required

-- Select --

Goal 2 (Medium Priority)

-- Select --

Goal 3 (Low Priority)

-- Select --

Populate

Next

Start a Mix

Hello, Lincoln, NE!

Based on your zipcode of: 68512, the average annual rainfall is 30.52". For your area, the First Frost is around 10/13, the Last Frost is around 04/22 and the Plant Hardiness Zone (PHZ) is 5b.

Details

Name Your Mix:

Acres to Plant:

Zipcode:

Bagging Option: ☒ Tote ☐ 50 lb bags ☐ Bulk

New!

Irrigation:

applied inches

Seeding Method:

Seeding Date:



Next Cash Crop:

Termination Date:



We need to know when you are planning to seed the mix.

Your selected growing period will last 207 days. It will also contain 626.51 base 50 growing degree days and 1,361.87 base 40 growing degree days.

Goals

Goal 1 (High Priority) Required

-- Select --

-- Select --

Increase Soil Organic Matter

Erosion Reduction

Nutrient Cycling

Nitrogen Fixation

Provide Lasting Residue

Weed Suppression

Compaction Breaking

Supplemental Grazing

Supplemental Hay

Diversify Introduced Perennial Pasture

Attract Beneficial Insects

Goal 2 (Medium Priority)

Erosion Reduction

Goal 3 (Low Priority)

Provide Lasting Residue

Next



Add	Legumes	Totals:	0%	0%	0%		\$0.00
		Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb
Add	Grasses	Totals:	0%	0%	0%		\$0.00
		Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb
Add	Brassicas	Totals:	0%	0%	0%		\$0.00
		Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb
Add	Broadleaves	Totals:	0%	0%	0%		\$0.00
		Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb

Increase Soil Organic Matter



Erosion Reduction



Provide Lasting Residue



Summary

Pounds/Acre: 0
Seeds/Acre: 0
Species: 0
Total Pounds: 0



New!

☒ Enable SmartMix Auto Adjust

100

Acres

	Pound	Acre	Total
Seed Cost	\$0.00	\$0.00	\$0.00
Inoculant Cost	\$0.00	\$0.00	\$0.00
Mixing Cost	\$0.00	\$0.00	\$0.00
Bagging Cost	\$0.00	\$0.00	\$0.00
Total Cost	\$0.00	\$0.00	\$0.00

Growing Period

Start: 10/01/2015
End: 04/01/2016
Duration: 183 days
GDD: 241 GDD (base 50)
742 GDD (base 40)



- Frost Period: 191 days
- Growing Period: 183 days

Region

Zip Code: 68512
PHZ: 5b
Frost Free: 04/22 - 10/13
Projected Precip: 8.35"
Avg. Annual Precip: 30.52"



Add

Legumes

Totals:

0%

0%

0%

\$0.00

Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre
Choose...	-	-	-	-	-	-
Choose...	0%	0%	0%			\$0.00
Choose...	0%	0%	0%			\$0.00
Choose...	0%	0%	0%			\$0.00

Excellent

Good

Choose...

Hairy Vetch-TNT 83.5

Hairy Vetch- Vallana 83.5

Winter Pea- Austrain 82

Winter Pea 82

Woolly Pod Vetch- Namoi 77.5

Winter Lentil- Morton 75.5

Clover- Hubam 74

Chick Pea- Desi 72

Clover- Balansa 71

Clover - Yellow Sweet 71.5

Clover - Arrowleaf 71

Clover - Alsike 68

Chickling Vetch- AC Greenfix 68.5

Common Vetch 68.5

Clover - White LA S1 67.5

Spring Forage Pea 67

Clover - Subterranean 67.5

increase Soil Organic Matter

0

Erosion Reduction

0

Provide Lasting Residue

0

New!

☐ Enable SmartMix Auto Adjust

100

Acres

	Pound	Acre	Total
Seed Cost	\$0.00	\$0.00	\$0.00
Inoculant Cost	\$0.00	\$0.00	\$0.00
Mixing Cost	\$0.00	\$0.00	\$0.00
Bagging Cost	\$0.00	\$0.00	\$0.00
Total Cost	\$0.00	\$0.00	\$0.00

Growing Period

Start: 10/01/2015

End: 04/01/2016

Duration: 183 days

GDD: 241 GDD (base 50)
742 GDD (base 40)

Dec

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Frost Period: 191 days

Growing Period: 183 days

Region

Zip Code: 68512

PHZ: 5b

Frost Free: 04/22 - 10/13

Projected Precip: 8.35"

Avg. Annual Precip: 30.52"



Add Species

You have chosen to add **Hairy Vetch- Vallana** which is a **CS-B Legume** and has a suggested full seeding rate of **21 pounds per acre**.

How many pounds of Hairy Vetch- Vallana would you like to apply per acre?

☐ Don't show this popup again and let SmartMix auto adjust the seeding rates for this mix

Broadleaves

Totals:

0%

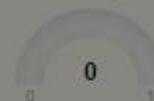
0%

0%

\$0.00

Provide Lasting Residue

Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre
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Summary

Pounds/Acre: 0

Seeds/Acre: 0

Species: 0

Total Pounds: 0



New!

☐ Enable SmartMix Auto Adjust

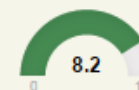
Acres

	Pound	Acre	Total
Seed Cost	\$0.00	\$0.00	\$0.00
Inoculant Cost	\$0.00	\$0.00	\$0.00
Mixing Cost	\$0.00	\$0.00	\$0.00
Bagging Cost	\$0.00	\$0.00	\$0.00
Total Cost	\$0.00	\$0.00	\$0.00



Add Legumes		Totals:		25%	10%	6%	\$ 10.76			
Rates:	Full	Mix	Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre	
✖	Hairy Vetch- Vallana 83.5	21	5.25	CS-B	25%	10%	6%	12,000.00	\$ 2.05	\$ 10.76
Add Grasses		Totals:		50%	80%	84%	\$ 12.69			
Rates:	Full	Mix	Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre	
✖	Cereal Rye - Elbon South	86	21.50	CS-G	25%	40%	46%	22,150.00	\$ 0.30	\$ 6.45
✖	Winter Barley 81	86	21.50	CS-G	25%	40%	38%	18,000.00	\$ 0.29	\$ 6.24
Add Brassicas		Totals:		25%	4%	5%	\$ 5.06			
Rates:	Full	Mix	Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre	
✖	Nitro Radish- Diakon Oil	9	2.25	CS-B	25%	4%	5%	25,000.00	\$ 2.25	\$ 5.06
Add Broadleaves		Totals:		25%	6%	5%	\$ 2.28			
Rates:	Full	Mix	Type	% Full Rate	% Wt	% Seeds	Seeds/lb	Cost/lb	Cost/Acre	
✖	Safflower 79	13	3.25	WS-B	25%	6%	5%	15,000.00	\$ 0.70	\$ 2.28

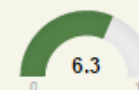
Increase Soil Organic Matter



Erosion Reduction



Provide Lasting Residue



Summary

Pounds/Acre: 53.75
Seeds/Acre: 1,031,225.00
Species: 5.00
Total Pounds: 5,375.00



New!

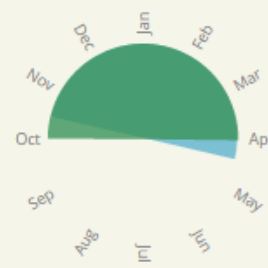
☒ Enable SmartMix Auto Adjust

100 Acres

	Pound	Acre	Total
Seed Cost	\$ 0.57	\$ 30.79	\$ 3,078.50
Inoculant Cost	\$ 0.025	\$ 1.34	\$ 134.38
Mixing Cost	\$ 0.04	\$ 2.15	\$ 215.00
Bagging Cost	\$ 0.00	\$ 0.00	\$ 0.00
Total Cost	\$ 0.64	\$ 34.28	\$ 3,427.88

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