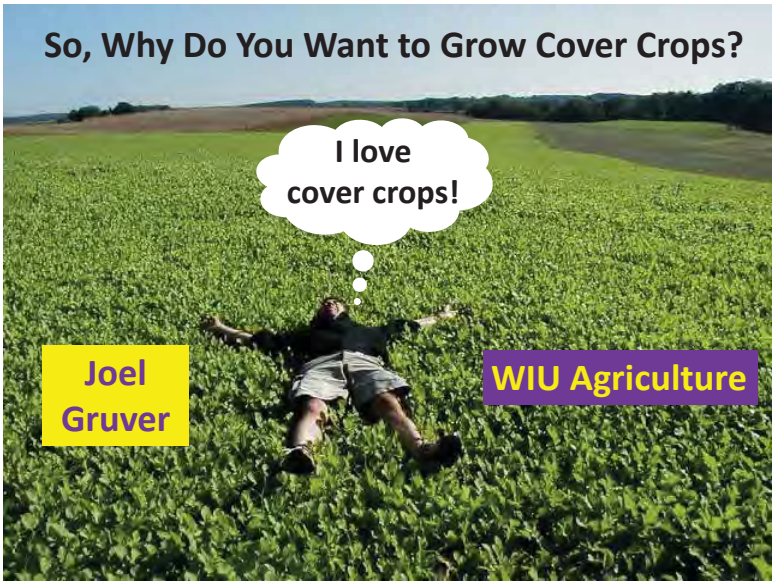
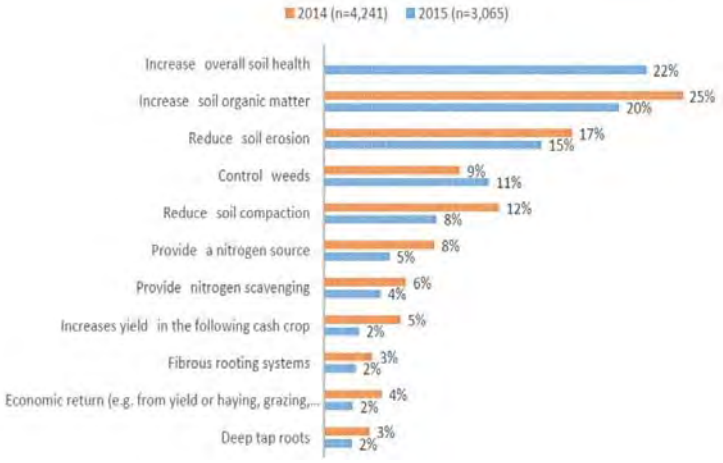

So, Why Do You Want to Grow Cover Crops?
I love cover crops!
Joel Gruver
WIU Agriculture


Cover Crops, a Farming Revolution With Deep Roots in the Past
By STEPHANIE STROM FEB. 6, 2016
Did anyone send you this NYT article? ☺
Dan DeSutter - Attica, IN
Prairie FARMER
Cover it up
JOURNAL OF SOIL AND WATER CONSERVATION
COVER CROPS


So, Why Do You Want to Grow Cover Crops???
Why is gramps so skeptical?

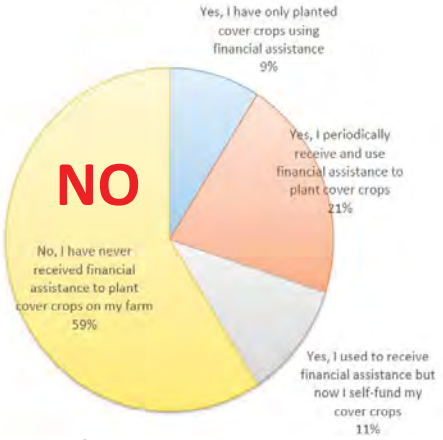

So, Why Do You Want to Grow Cover Crops???
I solve problems!
WEED IDENTIFICATION GUIDE

Farmer Objectives for CCs



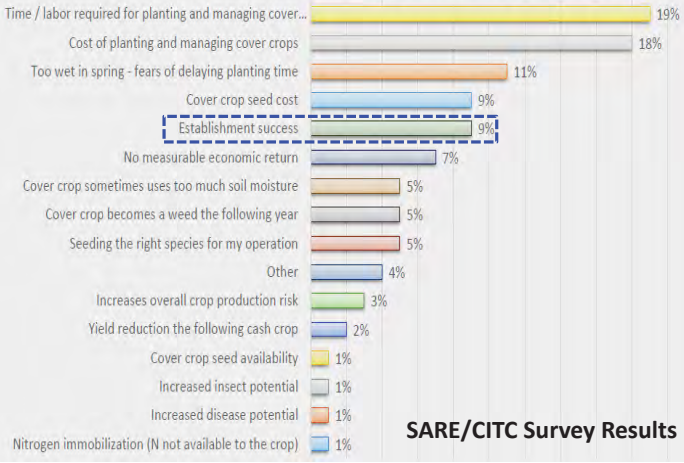
SARE/CITC Survey Results

Have you received cost-share assistance or incentive payments to plant cover crops?



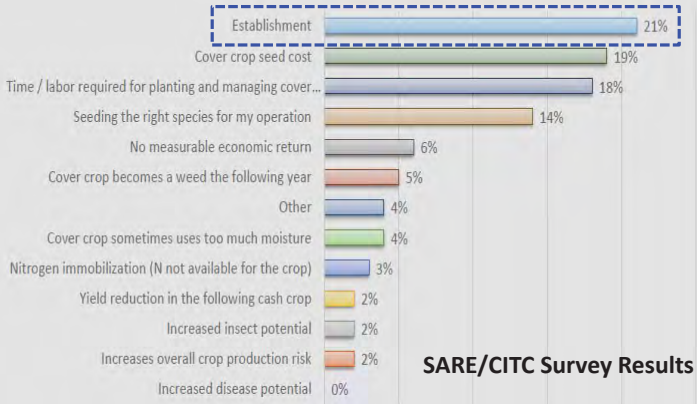
SARE/CITC Survey Results

What are the 3 most important factors that prevent you from using cover crops on your farm? (Cover Crop Non-Users)



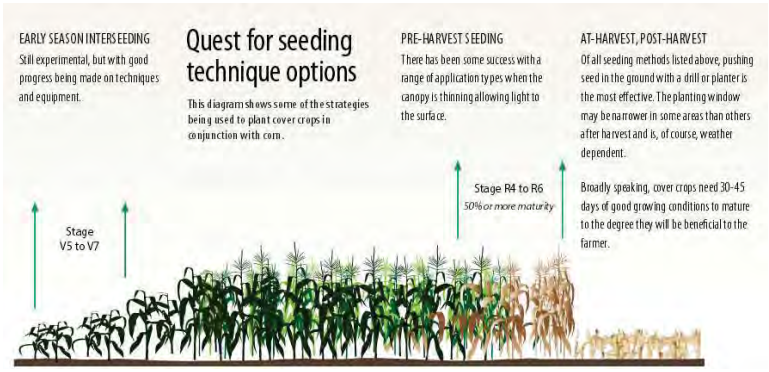
SARE/CITC Survey Results

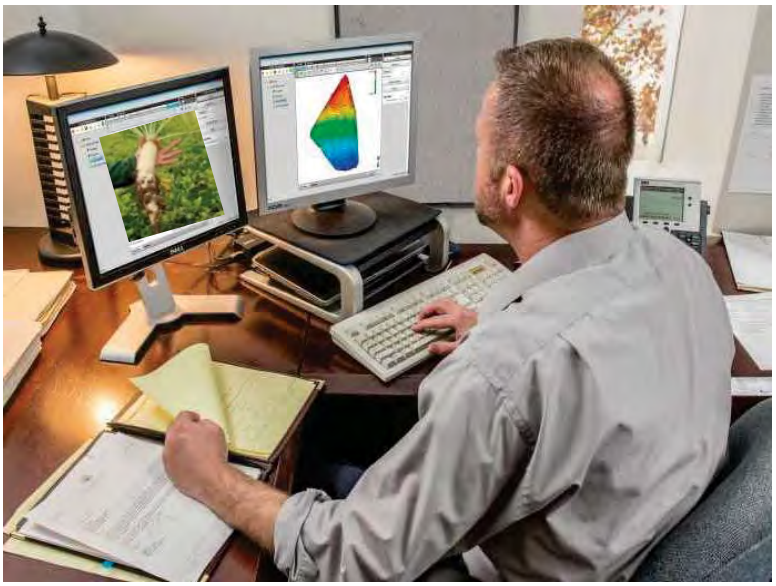
What are your biggest challenges with using cover crops? Please select your top three challenges. Cover Crop Users

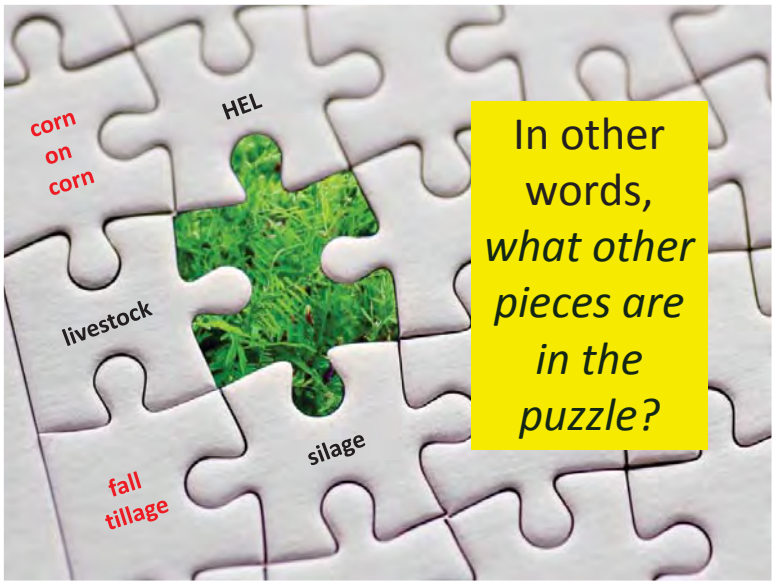


SARE/CITC Survey Results

CC objectives must be aligned with realistic establishment options







Managing your cash crop to cover crop effectively

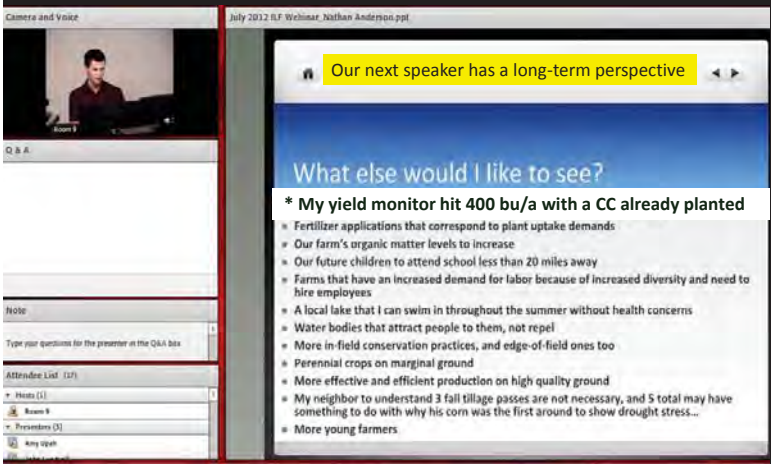
Cameron Mills

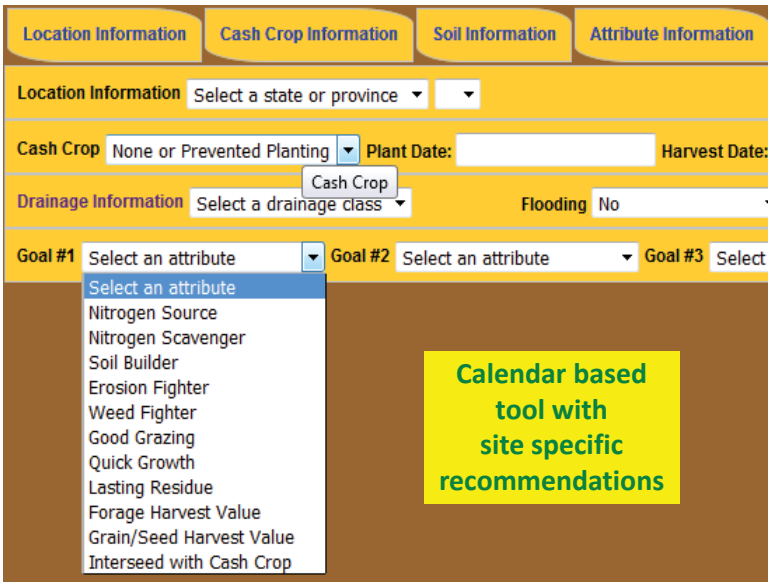
NoTill Farmer Webinar – 4/7/15

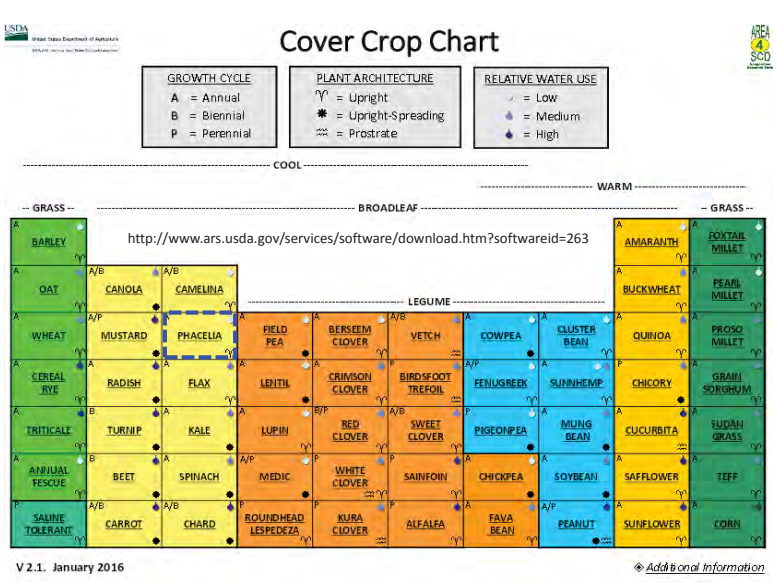
https://www.youtube.com/watch?v=hFA6oXevOQk

Visioning Long-Term Sustainability: A Farmer's Perspective

http://www.leopold.iastate.edu/news/calendar/2012-07-18/iowa-learning-farms-july-webinar-nathan-anderson

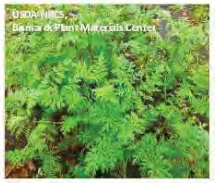






Phacelia
(*Phacelia tanacetifolia* Benth.)

- Cool Season, broadleaf
- Annual
- Upright plant architecture
- Low water use
- Low salinity tolerance
- Seeding depth: ⅛ – ¼ inch
- C:N ratio: 10 – 15
- Forms arbuscular mycorrhizal associations
- Attracts beneficial insects



Back to Cover Crop Chart

Cool Season Broadleaf

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service
South Dakota

Cover Crops to Improve Soil in Prevented Planting Fields

SD-FS-92 http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1187343.pdf July 2013

Prolonged rain and flooding has resulted in many fields that will go unplanted this year. Farmers in this situation need to weigh not only their program and insurance options ("prevented planting"), but should also assess agronomic options to ensure long-term productivity from this difficult situation.

Producers should explore the benefits of planting a cover crop that has the potential to use excess water, fix nitrogen, control weeds, reduce compaction, control erosion, and/or improve soil health and biology during the remainder of the season.

These together can build considerable yield potential for following crops. With the potential "prevented planting" payment and the improved yield potential following a full season "green manure" crop, their economic potential for the whole rotation could be considerable.

Producers are advised to check with USDA's Farm Service Agency (FSA) and Risk Management Agency (RMA) on prevented planting requirements and harvest restrictions

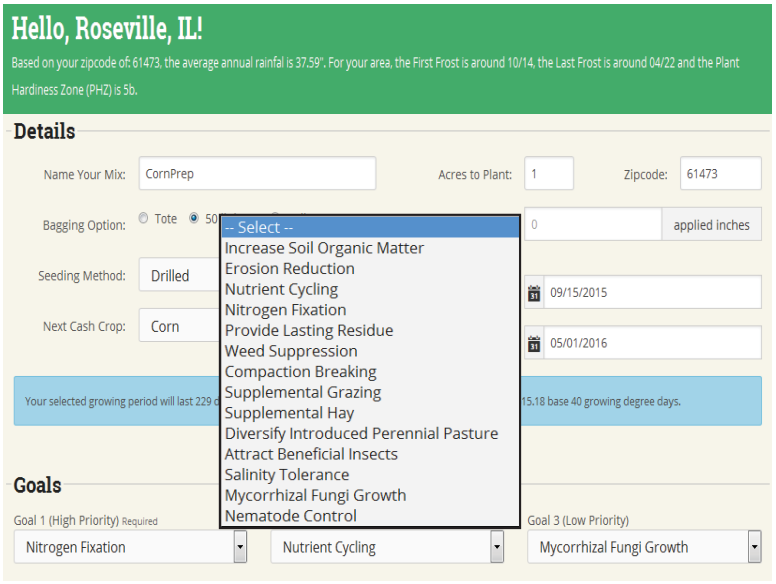
Selecting high bio-mass cover crop mixes will rebuild topsoil. Cover crops, especially if no-tilled, will add organic biomass both above and below ground to rebuild topsoil quicker than if left to grow weeds or especially if left with no cover.

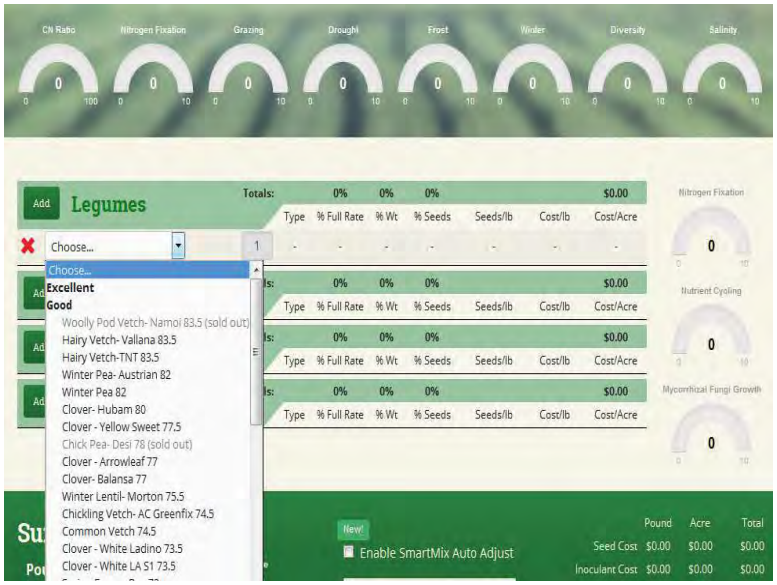
Avoid removing biomass from the field by harvesting for forage or tillage, which will reduce the organic matter benefits. Instead consider

Goal specific CC combos for PP scenarios

(Purpose)	Species	Variety	Full rate	% in mix	Seeding rate for mix
Soil Building	Oat		70.0	10%	7.0
	Flax		20.0	20%	4.0
	Millet	pearl	25.0	20%	5.0
	Rapeseed	Dwarf Essex	5.0	15%	0.8
	Radish	diakon	8.0	15%	1.2
	Sunflower		7.0	10%	0.7
	Cowpea		30.0	10%	3.0
Nitrogen Fixing	Lentil		30.0	20%	6.0
	Common vetch		25.0	25%	6.3
	Cowpea		30.0	15%	4.5
	Radish		8.0	10%	0.8
	Turnip		4.0	15%	0.6
	Pea	Field	70.0	15%	10.5
Compaction	Rapeseed	Dwarf Essex	5.0	40%	2.0
	Radish		8.0	40%	3.2
	Common vetch		25.0	20%	5.0
Erosion Control	Oat		70.0	20%	14.0
	Millet	pearl	25.0	25%	6.3
	Winter rye or wheat	cereal	100.0	15%	15.0
	Radish	oil seed	8.0	20%	1.6
	Alsike clover		3.0	10%	0.3
	Common vetch		25.0	10%	2.5

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1187343.pdf

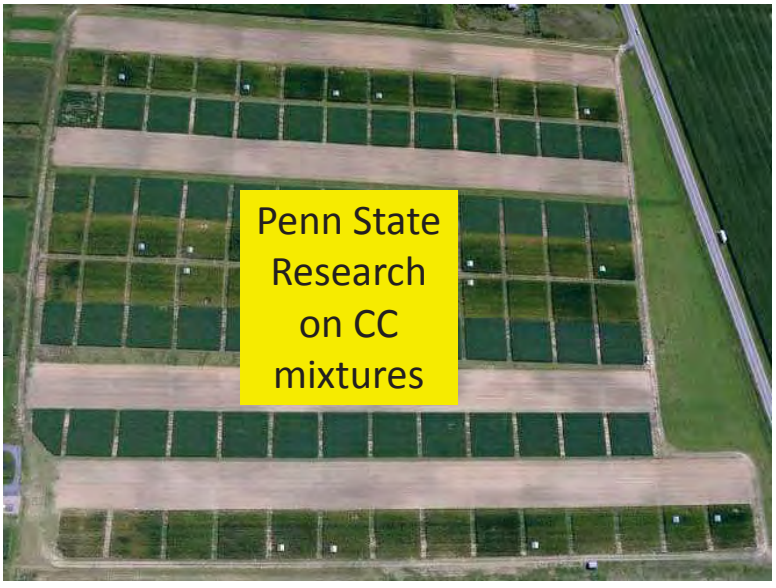




Specific CCS Products

	WHAT DO YOU WANT TO ACCOMPLISH?						
FERTILITY	Spring N fixation	○	○	○	○	◕	◕
	Summer N fixation	○	○	○	●	◔	◔
	Scavenge N in fall	●	●	●	◑	◑	◑
	Scavenge N in spring	○	●	●	○	◕	◕
	Fast nutrient release	◕	◔	◔	◕	●	●
SOIL BENEFITS	Reduce wind erosion	●	◕	●	●	◕	◑
	Reduce water erosion	◑	●	●	◑	◑	◑
	Alleviate compaction	●	●	◕	◑	◔	◔
	Add soil organic matter	●	◕	◕	◑	◔	◔
	Winter survivability	◔	◕	●	○	◕	●
	Root knot nematode reduction	○	○	○	◕	○	○
FUNCTIONS	Stands erect	●	◕	●	●	◔	◔
	Length of vegetative stage	◑	◕	●	◑	◑	◕
	Winter ground cover	◕	●	●	◔	◔	◔

http://www.covercropsolutions.com/documents/literature/tillage-radish-resource-guide.pdf



Making the Most of Mixtures: Considerations for Winter Cover Crops in Temperate Climates

New Penn State report published on-line in May 2015

Authors:

Charles White, Penn State University; Mary Barbercheck, Penn State University; Tianna DuPont, Penn State University; Denise Finney, Penn State University; Abbe Hamilton, Penn State University; Dave Hartman, Penn State University; Mena Hautau, Penn State University; Jermaine Hinds, Penn State University; Mitch Hunter, Penn State University; Jason Kaye, Penn State University; Jim La Chance, Penn State University

Contents

Introduction

Cover crops can provide multiple benefits. For example, they can improve soil health, supply nutrients to cash crops, suppress weeds, help manage insect pests, produce forage, support pollinators and beneficial insects, and reduce water and air pollution. However, not all cover crop species provide the same benefits. How can you best reap the multiple benefits of cover cropping with so many species to choose from? To multiply and diversify your cover crop benefits, plant mixtures.

This article will describe some of the basic concepts to consider when planning a cover crop mixture. Selecting complementary species to meet different farm management objectives, timing planting and management correctly, and using effective establishment and termination methods are all important for successful cover crop mixtures. Information in this article is based on the research and experiences of a multidisciplinary team of researchers, educators, and farmers who have been evaluating cover crop mixtures in the northeastern United States. Most of our experience with cover crop mixtures is in organic feed crop rotations in temperate humid climates where cover crops are used during overwinter fallow periods. Despite the regional and cropping system specificity of our experience, many of the principles described in this article can be applied to a variety of farming systems and climates.

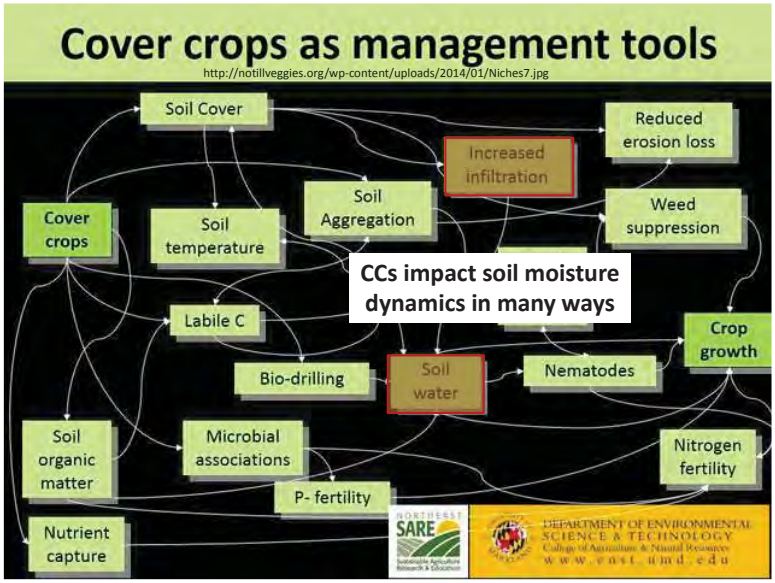
http://articles.extension.org/pages/72973/making-the-most-of-mixtures:-considerations-for-winter-cover-crops-in-temperate-climates#

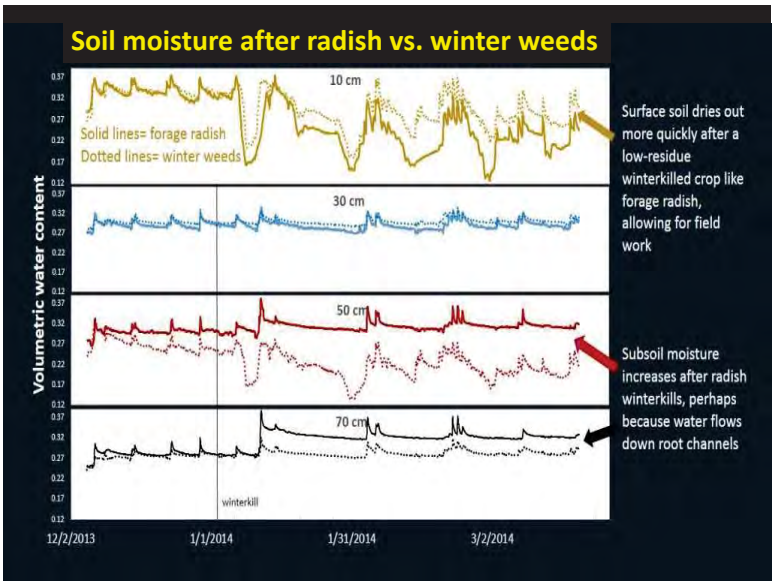
Determining seeding rates in mixes

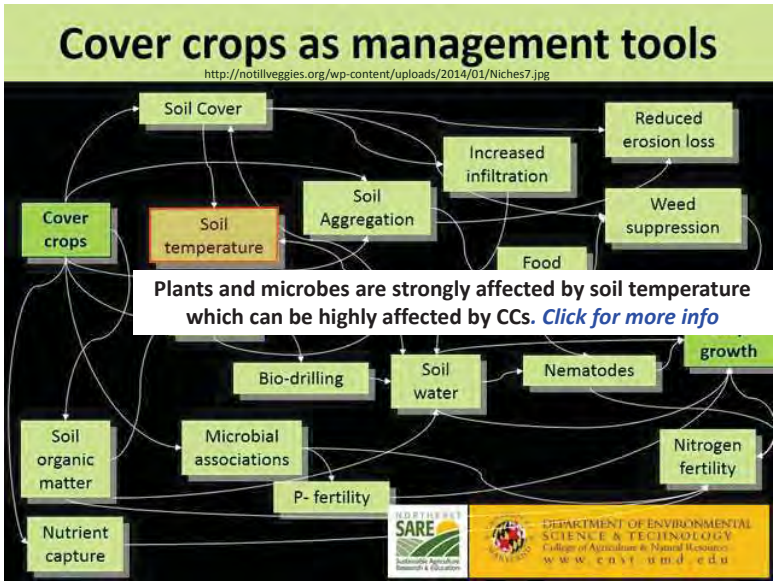
Determining appropriate seeding rates of each species in a mixture can be difficult. Start with the suggestions below, plant a small acreage, observe the results, and then make adjustments as necessary. Be aware that results will vary across fields, years, and climate zones.

Certain species are highly competitive against other species in a mix, including forage radish, canola (*Brassica rapa*), oats, sorghum-sudangrass, and cereal rye. Seeding rates of these species must be dramatically reduced from monoculture seeding rates to prevent them from dominating the mixture. Seeding rates for these species in mixtures should be no more than 2 to 3 lb/A for forage radish, 3 to 4 lb/A for canola, 15 to 20 lb/A for sorghum-sudangrass, and 20 to 30 lb/A for oats or cereal rye.

Seeding rates for other grasses in a mixture can safely be reduced to between half and one-quarter of monoculture seeding rates to achieve a balanced stand with legumes and other broadleaf species. **Legume components of a mixture, which tend to be weak competitors, are more safely kept near their monoculture rates to ensure establishment in the stand**.

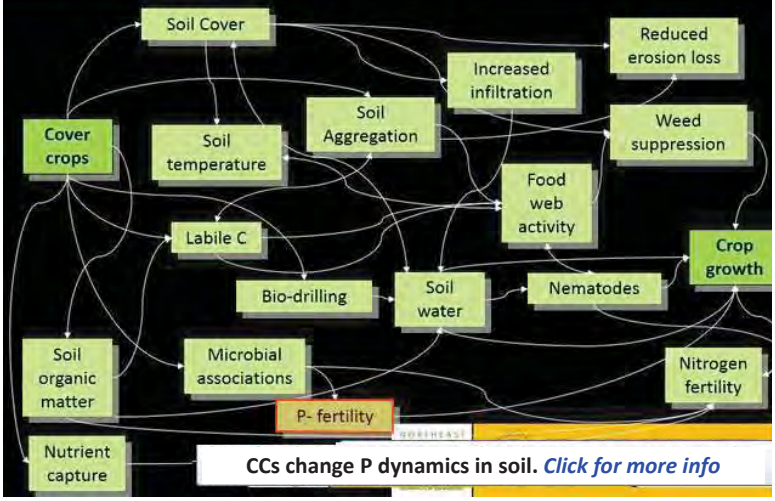






Cover crops as management tools

http://notillveggies.org/wp-content/uploads/2014/01/Niches7.jpg



CCs change P dynamics in soil. *Click for more info*