

MCCC Cover Crop Decision Tool: Guidance for Cover Crop Selection

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Background

- Cover crops provide a variety of ecosystem services, including:
 - Erosion protection
 - Soil building
 - Nitrogen sourcing and scavenging
 - Weed, disease and pest management



- Widespread cover crop adoption in the Midwest has been hampered by:
 - Lack of knowledge and understanding of:
 - Cover crop alternatives
 - Agronomic and environmental benefits
 - Economic risks
 - Accessibility to specific cover crop application information

Background

- Project is a collaborative effort of the Midwest Cover Crops

Council (MCCC)

- Formed in 2006
- Diverse group
 - Academia
 - Production agriculture
 - NGOs
 - Commodity interests
 - Private sector
 - Federal and state agencies



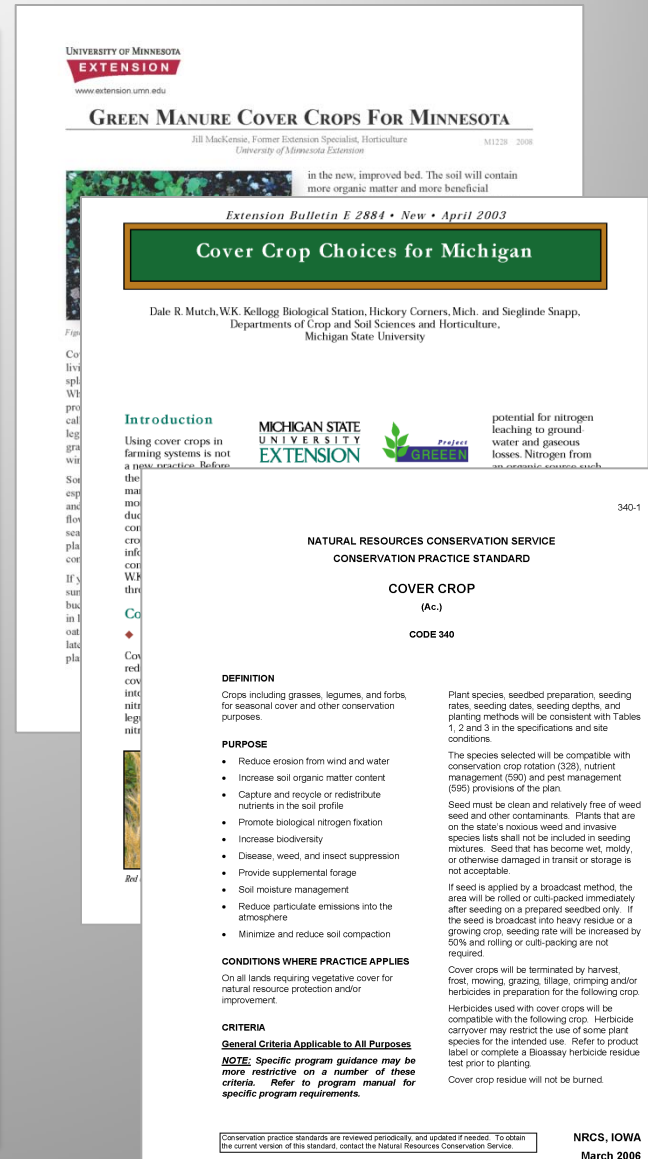
- Representatives from:

- Illinois
- Indiana
- Iowa
- Michigan
- Minnesota
- North Dakota
- Ohio
- Ontario
- Wisconsin



Problem Statement

- Considerable local cover crop information has been generated by universities, agricultural organizations and farmers , however this information:
 - Resides within multiple organizations and systems
 - Varies in form and format
 - Is often difficult to locate
 - Does not lend itself to making cover crop decisions
- A regional system is required that:
 - Consolidates local information
 - Provides a common format
 - Implements a database
 - Is web-based
 - Supports cover crop decision-making



Cover Crop Decision Tool

- Development of the MCCC Cover Crop Decision Tool
 - Funded by a NRCS Conservation Innovation Grant
 - Through Conservation Technology Information Center
 - For Indiana and Ohio
- Currently seeking funding to include other states/provinces that are part of the MCCC



- Start with Information from the SARE/SAN book *Managing Cover Crops Profitably*
- Adapt to each state in the MCCC

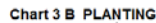


Chart 4 B POTENTIAL DISADVANTAGES

Chart 4 POTENTIAL ADVANTAGES

Soil Impact			Soil Ecology			Other					Comments/Pit-Cons	
odor	pH & K	topsoil	nematodes	disease	allopathic	ethic weeds	b-beneficials	Bear traffic	short windows			
												Reseeding, leave 3-4" to ensure germination.
												Can be harder than rye to incorporate, when mature cleaned, bio-turf seed will suffice
												Can become a weed if tilled at wrong stage
												Absorbs N and H2O heavily during stem growth, so kill
												Buckwheat sets seed quickly
												Mature, frost-killed plants become quite woody
												Great biofumigation potential, winter kills at 25°F
												Winter kills at 25°F cultivars vary widely
												Canada has been biotically active than rape
												Multiple cuttings needed to achieve maximum N
												Rome cultivars, nematode resistant
												Good for undersowing, easy to kill by tillage or mowing
												Susceptible to scorching in East
												Tolerates low fertility, wide pH range, cold or fluctuating winters
												Perennials easily become weedy
corn												Grows best where corn grows well
oats												Cultivars vary greatly
corn												Mature plants become woody
												Can be invasive, survives tillage
												Hard seed can be problematic; resident vegetation eventually
											</	

Chart 3 CULTURAL TRAITS

Chart 2 PERFORMANCE AND ROLES

	Species	Legume N Source	Total N (lb./A) ^a	Dry Matter (lb./A-yr) ^b	N Scavenger ^c	Soil Builder ^d	Erosion Fighter ^e	Weed Fighter ^f	Good Grazing ^g	Quick Growth ^h	Lasting Residual ⁱ	Dune-dw. ^j	Harvest Value ^k	Cash Crop Intersp. ^l	Comments
													F	S	
Non-legumes	Annual ryegrass			2000-9000											Heavy N and HPO user; cutting boosts dry matter significantly.
	Barley			3000-10000											Tolerates moderately alkaline conditions but does poorly in acid soil - pH 6.0
	Oats			2000-10000											Prono to lodging in N-rich soils
	Rye			3000-10000											Tolerates triazine herbicides
	Wheat			3000-7000											Heavy N and HPO user in spring
	Buckwheat			2000-3000											Summer smother crop, breaks down quickly.
Brassicas	Sorghum-sudangrass			8000-10000											Mid-season cutting increases root production.
	Mustards	30-120	3000-9000												Suppresses nematodes and weeds
	Radish	50-200	4000-7000												Good N scavenging and weed control; N released rapidly.
	Rapeseed	40-160	2000-5000												Suppresses Rhizoctonia
Berseem clover	Berseem clover	75-220	6000-10000												Very flexible cover crop, green manure, forage.
	Cowpeas	100-150	2500-4500												Season length, hardy variety for culture
	Crimson Clover	70-130	3500-5500												Establishes easily, grows quickly if planted early in fall; matures early in spring
	Field peas	90-150	4000-5000												Biomass breaks down quickly
Legumes	Hairy vetch	90-200	2300-5000												Bi-culture with small grain expands seasonal adaptability
	Medics	50-120	1500-4000												Use annual medic for interseeding
	Red Clover	70-150	2000-5000												Excellent forage, easily established, widely adapted
	Subterranean clover	75-200	3000-8500												Strong seedlings, quick to nodulate
	Sweetclovers	90-170	3000-5000												Tall stalks, deep roots in second year
	White clover	80-200	2000-6000												Persists after first year
	Woodsyod vetch	100-250	4000-8000												Resists poorly if mowed within 2 months of planting

⊖ = Poor, ⊖ = Fair, ⊕ = Good, ⊕ = Very Good, ⊕ = Excellent

^bTotal N—Total N from all plant. Grasses not considered N source.²N Scavenger—Ability to take up/store excess nitrogen.³Soil Builder—Organic matter yield and soil structure improvement.

⁴Erosion Fighter—Soil-holding ability of roots and total plant.

⁵ Action Residue—Rates how long the killed residue remains on the surface.

²Duration—Length of vegetative stage.

^bHarvest Value—Economic value as a forage (F) or as seed (S) or grain.

^bCash Crop Interseed—Rates how well the cover crop will perform with a

‡ SP=Short-lived perennial; WA=Winter annual

variability. To locate places to buy seed, see Seed Suppliers (p. 16).



Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province

None

County

None

Cash Crop Information

Crop

None or Prevented Planting

Plant Date

Month

Day

Harvest Date

Month

Day

Field Information

Soil Drainage Class

None

Flooding/Ponding

No

Cover Crop Attributes

#1	None
----	------

#2	None
----	------

#3	None
----	------

Select Cover Crop to Create Information Sheet

**Go to Information Sheet Tab to
View Cover Crop Information**

SELECT YOUR STATE/PROVINCE

1 - Mar	
15 - Feb	
1 - Feb	
15 - Jan	
1 - Jan	
15 - Dec	
1 - Dec	
15 - Nov	
1 - Nov	
15 - Oct	
1 - Oct	
15 - Sep	
1 - Sep	
15 - Aug	
1 - Aug	
15 - Jul	
1 - Jul	
15 - Jun	
1 - Jun	
15 - May	
1 - May	
15 - Apr	
1 - Apr	
15 - Mar	
1 - Mar	




Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province



Cash Crop Information

~~Crop~~

None or Prevented Planting

~~Plant Date~~

Month Day

Harvest Date

Month Day

Field Information

Soil Drainage Class

None

Flooding/Ponding

No

Cover Crop Attributes

#1	None
----	------



#2	None
----	------

#3	None
----	------

Select Cover Crop to Create Information Sheet

**Go to Information Sheet Tab to
View Cover Crop Information**


SELECT YOUR STATE/PROVINCE

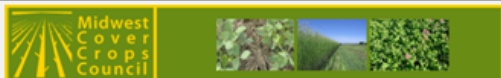
1 - Mar	15 - Mar	1 - Apr	15 - Apr	1 - May	15 - May	1 - Jun	15 - Jun	1 - Jul	15 - Jul	1 - Aug	15 - Aug	1 - Sep	15 - Sep	1 - Oct	15 - Oct	1 - Nov	15 - Nov	1 - Dec	15 - Dec	1 - Jan	15 - Jan	1 - Feb	15 - Feb	1 - Mar
<div>   </div> <div> <p>Location Information</p> <p>State/Province</p> <div> <div> None </div> <div> None Indiana Iowa Ohio </div> <div>None</div> </div> </div>																								



Location Information

State/Province





Midwest Cover Crops Council

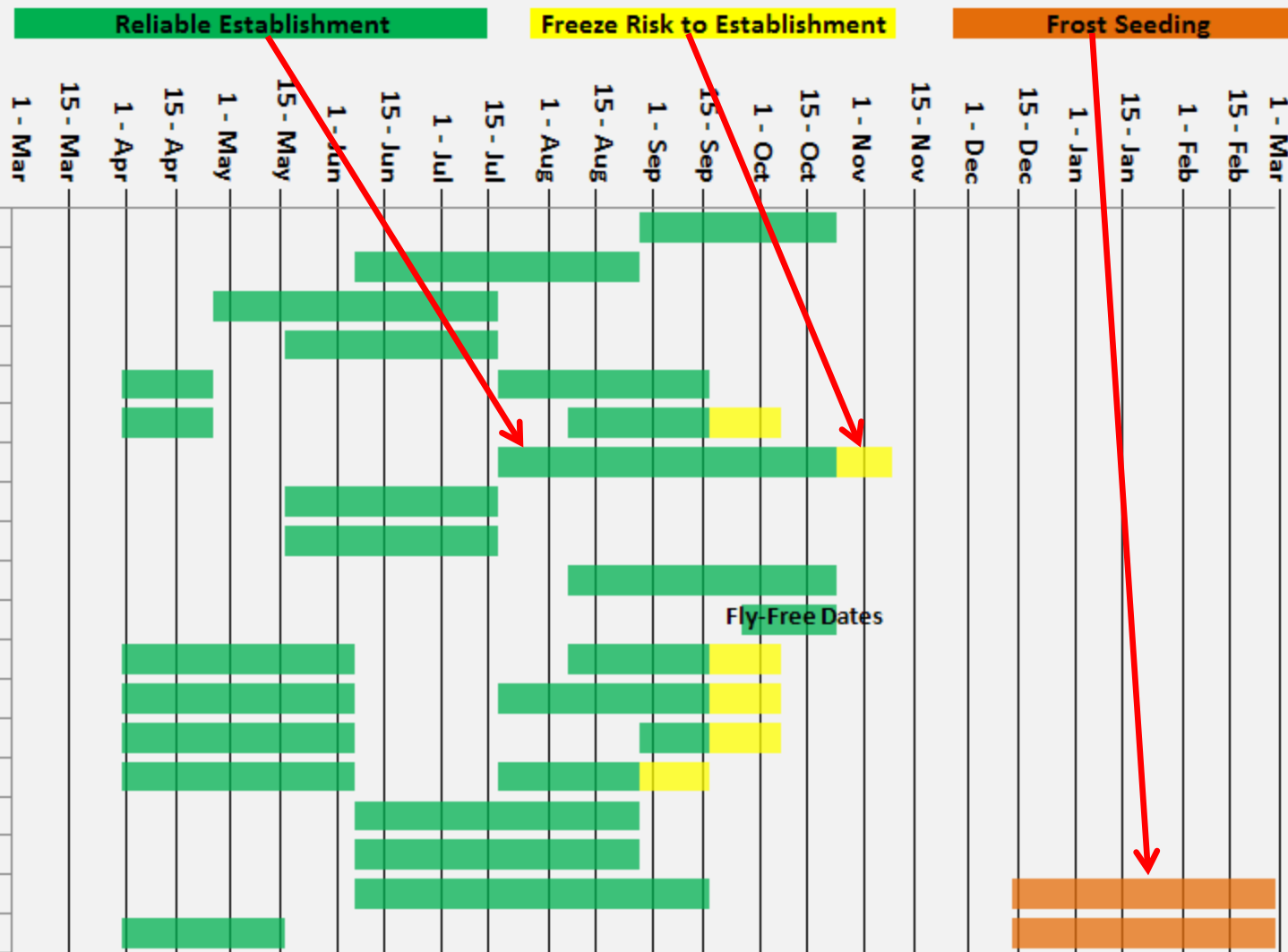
Barley, Winter

Buckwheat

Millet, Japanese

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Ohio: All Counties Average Seeding Dates



60% Oats/40% OSR



Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Ohio: All Counties Average Seeding Dates

Location Information
State/Province

County

Geauga
Greene
Guernsey
Hamilton
Hancock
Hardin
Harrison
Henry
Plant Date

Harvest Date

Field Information
Soil Drainage Class

Flooding/Ponding

Cover Crop Attributes
#1
#2
#3
Select Cover Crop to Create Information Sheet

Go to Information Sheet Tab to View Cover Crop Information

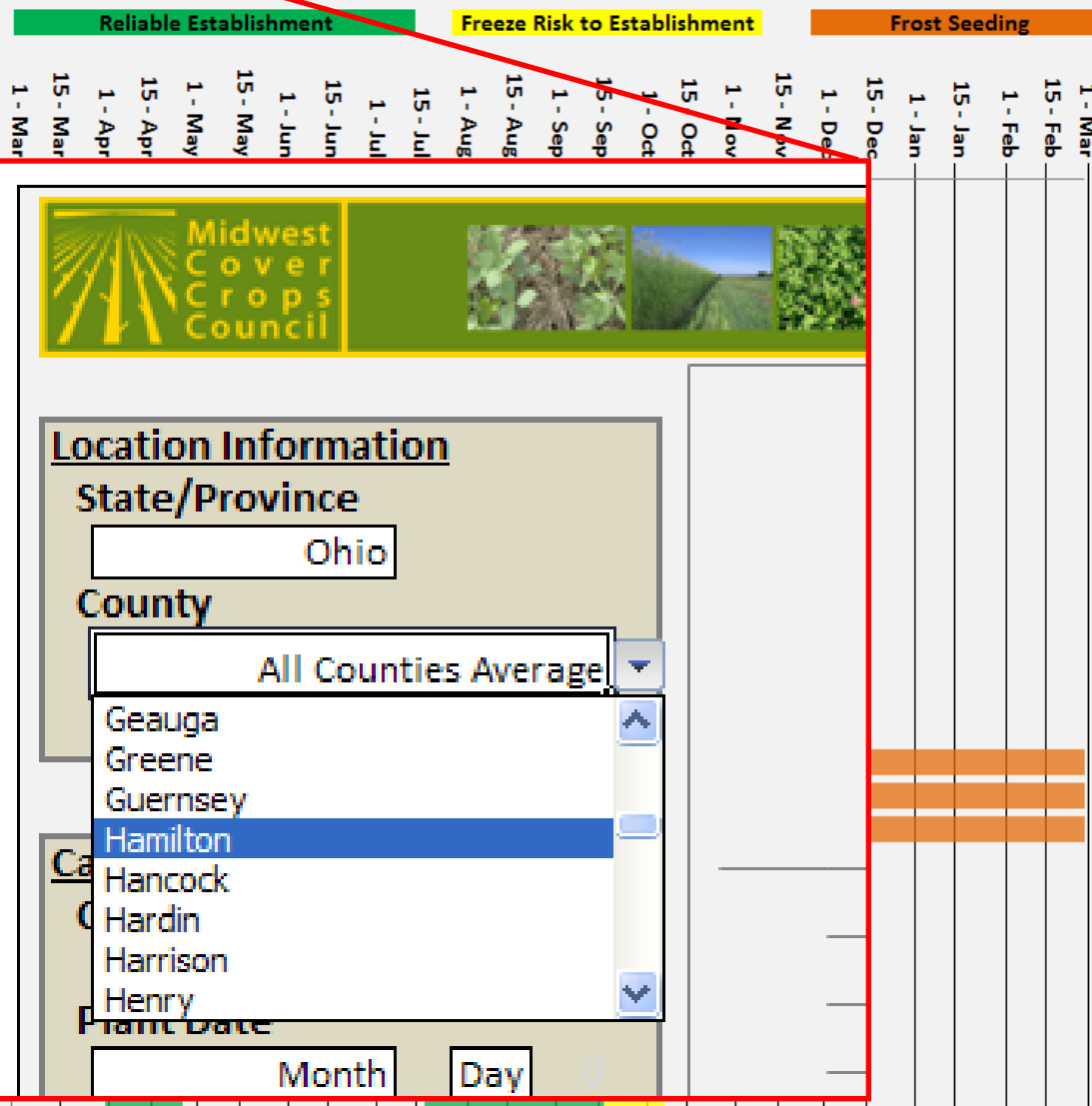
Nonlegumes

Brassicas

Legumes

Mixes

Barley, Winter
Buckwheat
Millet, Japanese
Millet, Pearl
Oats
Ryegrass, Annual
Rye, Winter Cereal
Sorghum-sudangrass
Sudangrass
Triticale, Winter
Wheat, Winter
Kale
Radish, Oilseed
Rapeseed/Canola
Turnip, Forage type
Alfalfa - Non-dormant
Clover, Berseem
Clover, Crimson
Clover, Red
Clover, Sweet
Pea, Field/Winter
Pea, Cow
Vetch, Hairy
60% A Ryegr/40% OSR
60% Cr Cl/40% A Ryegr
60% Cr Cl/40% Oats
50% HV/50% WC Rye
60% Oats/40% OSR



Location Information

Ohio: Hamilton County Seeding Dates

Ohio: All Counties Average Seeding Dates

Crop

File

Co #1

Se Information Sheet

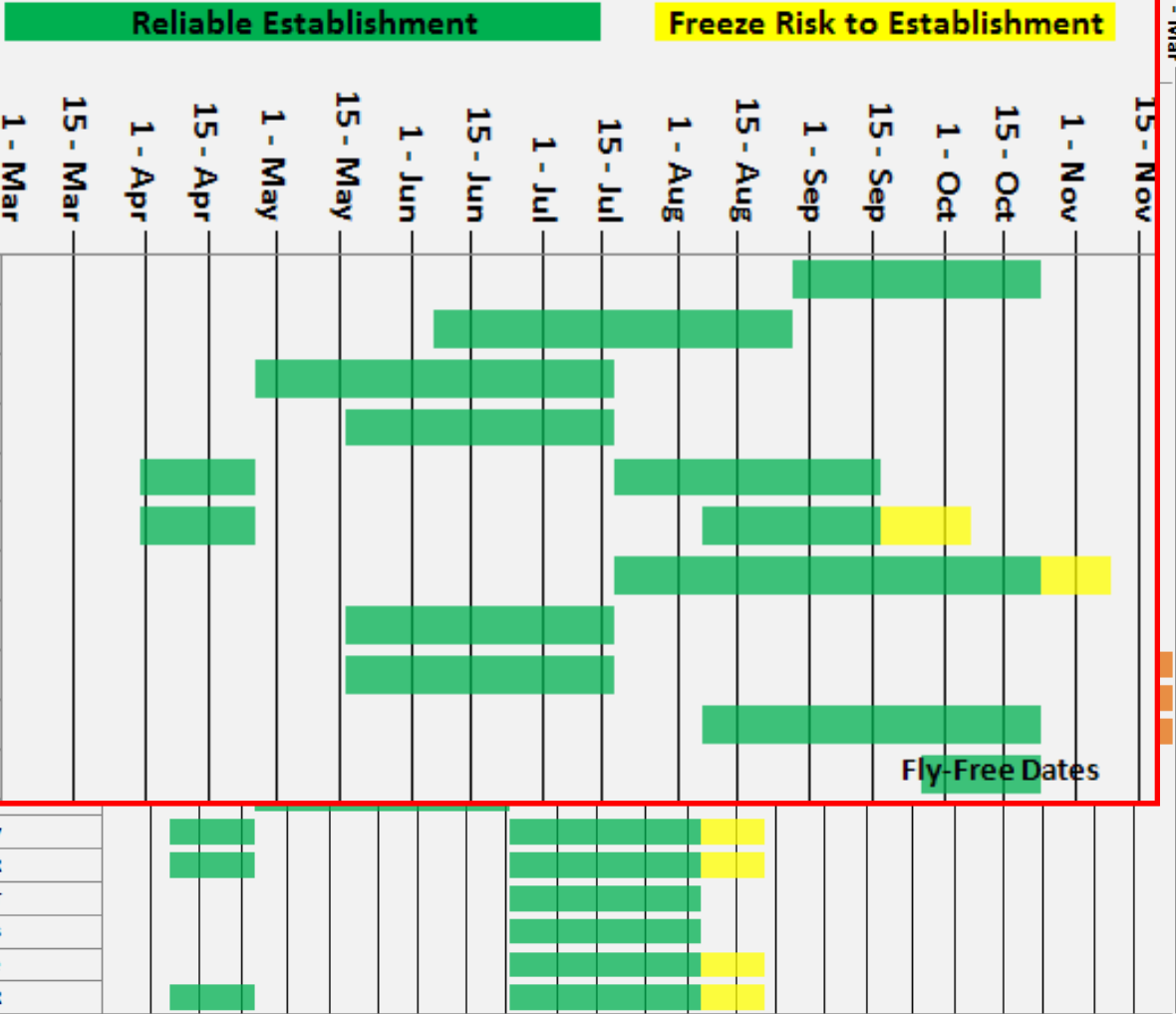
Go to Information Sheet Tab to View Cover Crop Information

Nonlegumes

- Barley, Winter
- Buckwheat
- Millet, Japanese
- Millet, Pearl
- Oats
- Ryegrass, Annual
- Rye, Winter Cereal
- Sorghum-sudangrass
- Sudangrass
- Triticale, Winter
- Wheat, Winter

Mixes

- Vetch, Hairy
- 60% A Ryegr/40% OSR
- 60% Cr Cl/40% A Ryegr
- 60% Cr Cl/40% Oats
- 50% HV/50% WC Rye
- 60% Oats/40% OSR



1 - Mar

Midwest Cover Crops Council - Cover Crop Decision Tool

Midwest Cover Crops Council - Cover Crop Decision Tool



Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province

Ohio

County

Hamilton

Cash Crop Information

Crop

Corn - Grain	
--------------	--

Plant Date

April

27

Harvest Date

October

15

Field Information

Soil Drainage Class

Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

No

Flooding/Ponding

No

Cover Crop Attributes

#1	None
----	------

None

#2	None
----	------

None

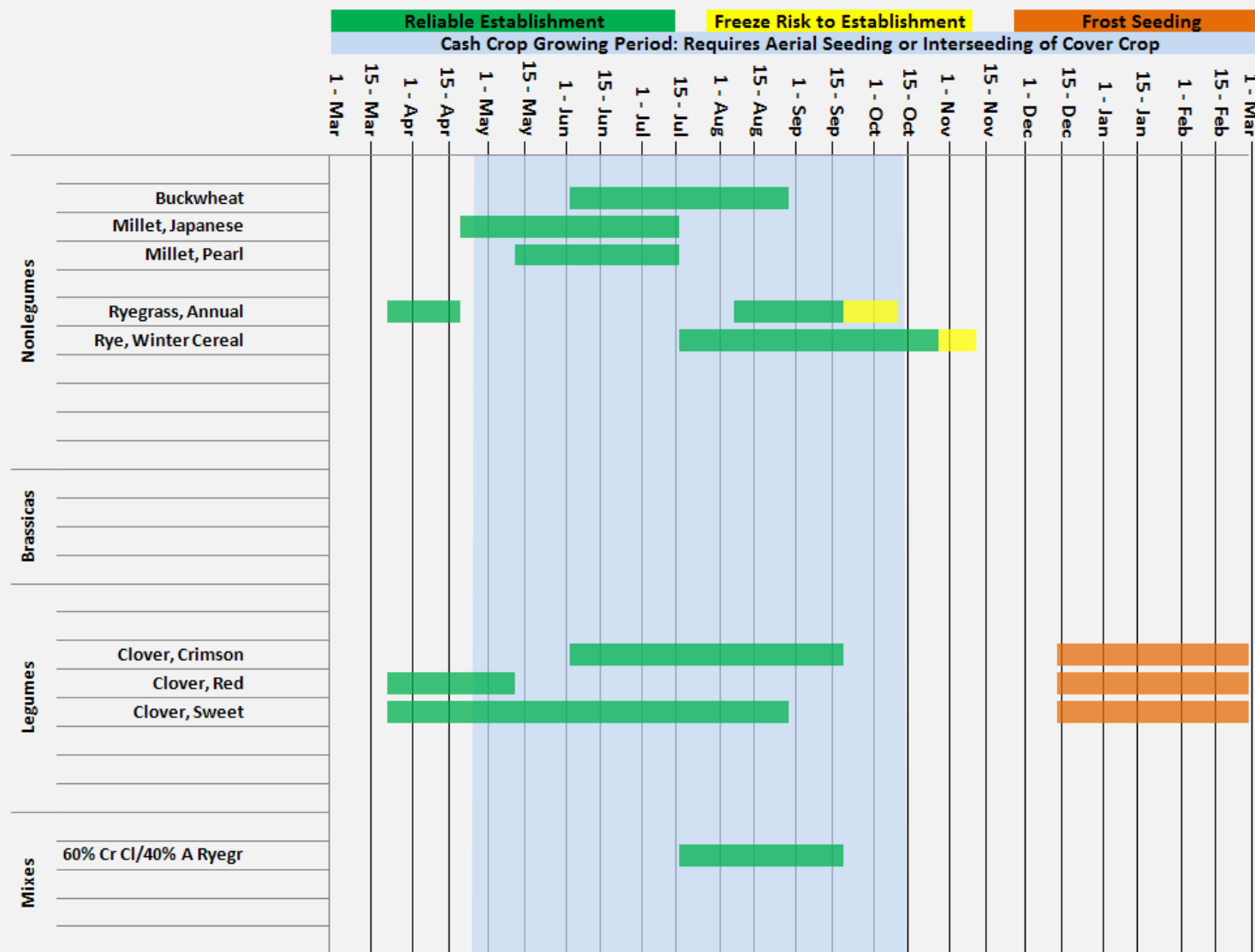
#3	None
----	------

None

Select Cover Crop to Create Information Sheet

**Go to Information Sheet Tab to
View Cover Crop Information**

Ohio: Hamilton County Seeding Dates





Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information
State/Province

County

Cash Crop Information
Crop

Plant Date

Harvest Date

Field Information
Soil Drainage Class

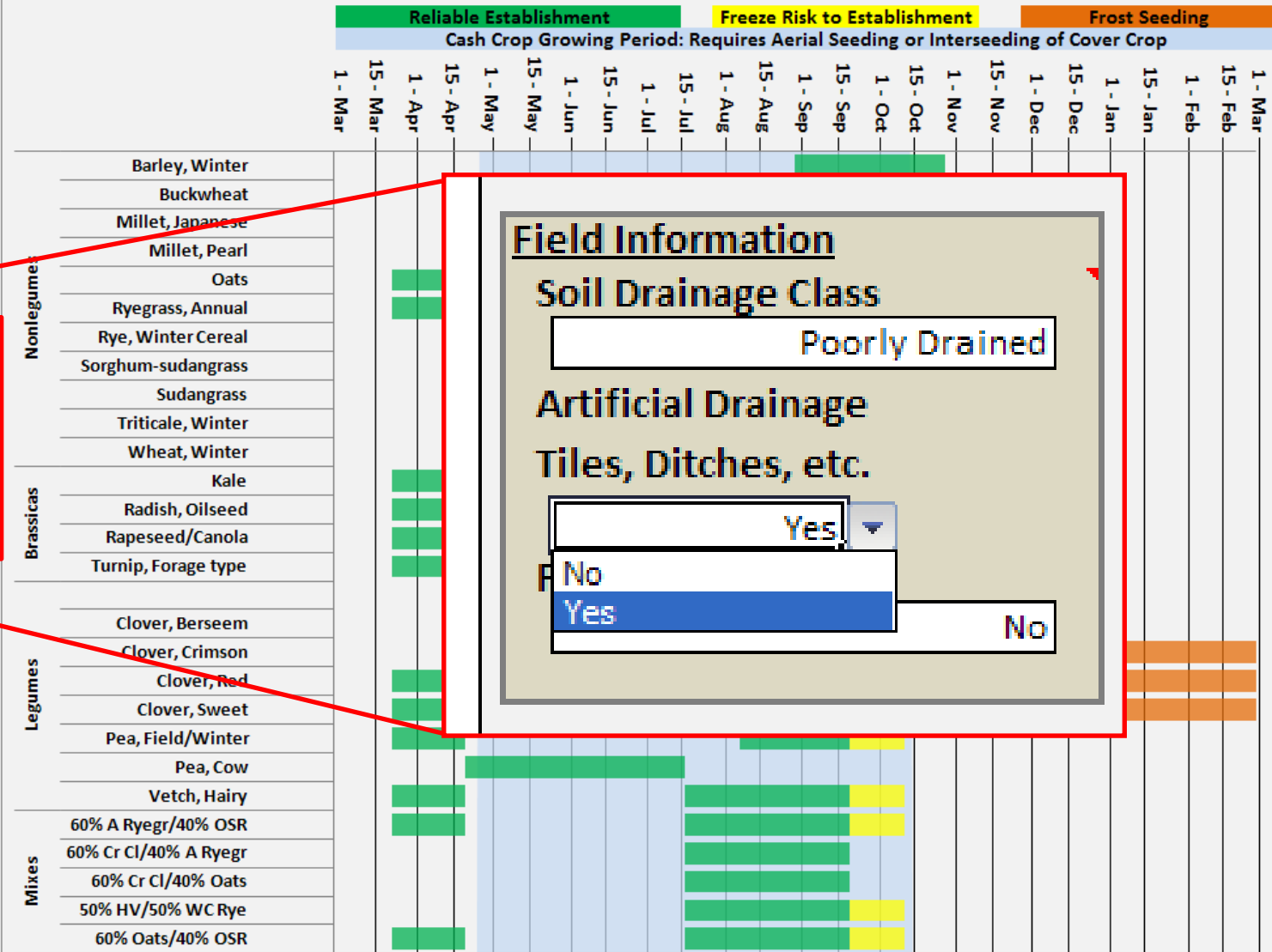
Artificial Drainage
Tiles, Ditches, etc.

Cover Crop Attributes
#1
#2
#3

Select Cover Crop to Create Information Sheet

Go to Information Sheet Tab to View Cover Crop Information

Ohio: Hamilton County Seeding Dates



Field Information

Soil Drainage Class

Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

Yes

No

Yes

No



Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province

Ohio

County

Hamilton

Cash Crop Information

Crop

Corn - Grain

Plant Date

April

27

Harvest Date

October

15

Field Information

Soil Drainage Class

Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

Yes

Flooding/Ponding

Brief (up to 7 days)

No

Brief (up to 7 days)

Long (7 days+)

Cover Crop Attributes

#1 None

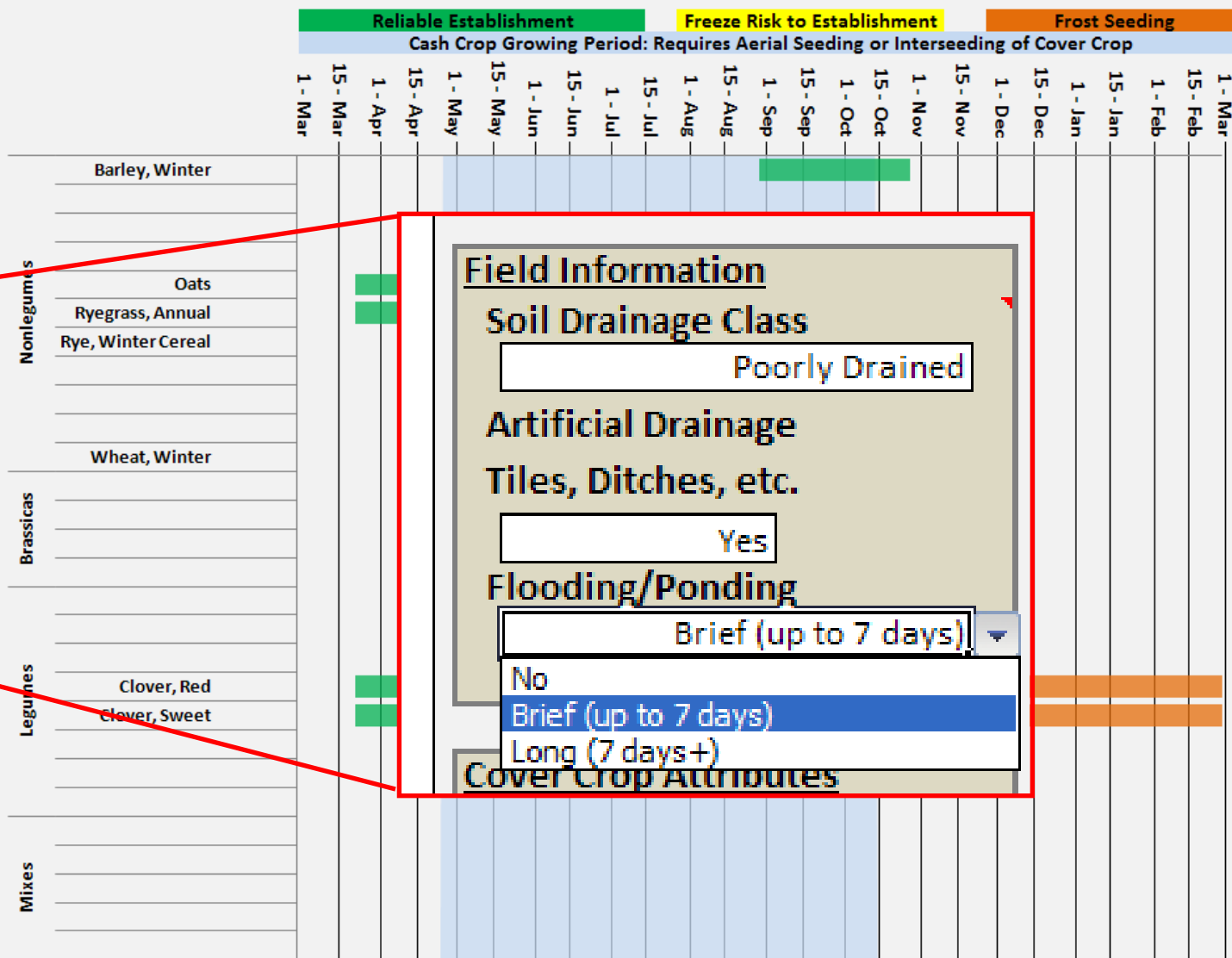
#2 None

#3 None

Select Cover Crop to Create Information Sheet

Go to Information Sheet Tab to View Cover Crop Information

Ohio: Hamilton County Seeding Dates



Field Information

Soil Drainage Class

Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

Yes

Flooding/Ponding

Brief (up to 7 days)

No

Brief (up to 7 days)

Long (7 days+)

Cover Crop Attributes

Select Cover Crop to Create
Information Sheet

**Go to Information Sheet Tab to
View Cover Crop Information**

~~Midwest Cover~~

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information
State/Province

County

Cash Crop Information

Crop

Plant Date

Harvest Date

Field Information

Soil Drainage Class

Artificial Drainage
 Tiles, Ditches, etc.

Flooding/Ponding

		Re	
		1 - Apr	
		15 - Mar	
		1 - Mar	
Nonlegumes	Barley, Winter		
	Buckwheat		
	Millet, Japanese		
	Millet, Pearl		
	Oats		
	Ryegrass, Annual		
	Rye, Winter Cereal		
	Sorghum-sudangrass		
	Sudangrass		
	Triticale, Winter		
Wheat, Winter			
Brassicas	Kale		
	Radish, Oilseed		
	Rapeseed/Canola		
	Turnip, Forage type		
Legumes	Alfalfa - Non-dormant		
	Clover, Berseem		
	Clover, Crimson		
	Clover, Red		
	Clover, Sweet		
	Pea, Field/Winter		
	Pea, Cow		
	Vetch, Hairy		
Mixes	60% A Ryegr/40% OSR		
	60% Cr Cl/40% A Ryegr		
	60% Cr Cl/40% Oats		
	50% HV/50% WC Rye		
	60% Oats/40% OSR		

Frost Seeding	
Overseeding of Cover Crop	
1 - Mar	
15 - Feb	
1 - Feb	
15 - Jan	
1 - Jan	
15 - Dec	
1 - Dec	
15 - Nov	
1 - Nov	



Location Information

State/Province

County

Cash Crop

Crop

Plant Date

Harvest Date

Field Info

Soil Drainage

Soil Type

Artificial

Tiles, Drains

Flooded

Cover Crop

#1

#2

#3

Select Cover Crop

Information

Go to Information Sheet Tab to
View Cover Crop Information

Cover Crop Attribute Ratings

Cover Crop Attribute Ratings

0 - Poor, 1 - Fair, 2 - Good

3 - Very Good, 4 - Excellent

Lasting Residue

Weed Fighter

Nitrogen Scavenger

Nonlegumes

Barley, Winter

3

3

4

Millet, Japanese

4

3

3

Millet, Pearl

4

3

3

Oats

4

4

2

Ryegrass, Annual

3

3

3

Rye, Winter Cereal

4

4

4

Sorghum-sudangrass

4

3

3

1 - Mar

15 - Mar

1 - Apr

15 - Apr

1 - May

15 - May

1 - Jun

15 - Jun

1 - Jul

15 - Jul

Reliable Establishment

Cash Crop Growing Period: Required

Mid

50% HV/50% WC Rye

3

3

2

50% HV/50% WC Rye



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Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province

Ohio

County

Hamilton

Cash Crop Information

Crop

Corn - Grain

Plant Date

April

27

Harvest Date

October

15

Field Information

Soil Drainage Class

Somewhat Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

Yes

Flooding/Ponding

No

Cover Crop Attributes

#1 Nitrogen Scavenger

#2 Weed Fighter

#3 Lasting Residue

Select Cover Crop to Create Information Sheet

- Millet, Pearl
- Oats
- Ryegrass, Annual
- Rye, Winter Cereal**
- Sorghum-sudangrass
- Sudangrass
- Triticale, Winter
- Wheat, Winter

Cover Crop Attribute Ratings

0 - Poor, 1 - Fair, 2 - Good

3 - Very Good, 4 - Excellent

Lasting Residue

Weed Fighter

Nitrogen Scavenger

Nonlegumes

Brassicas

Legumes

Mixes

Barley, Winter 3 3 4

Millet, Japanese 4 3 3

Millet, Pearl 4 3 3

Oats 4 4 2

Ryegrass, Annual 3 3 3

Rye, Winter Cereal 4 4 4

Sorghum-sudangrass 4 3 3

Sudangrass 4 3 3

Triticale, Winter 3 3 3

Wheat, Winter 3 3 3

Rapeseed/Canola 3 3 2

Clover, Berseem 2 3 2

Clover, Crimson 2 3 2

Clover, Red 2 3 2

60% A Ryegr/40% OSR 3 3 2

60% Cr Cl/40% A Ryegr 2 3 2

60% Cr Cl/40% Oats 2 3 2

50% HV/50% WC Rye 3 3 2

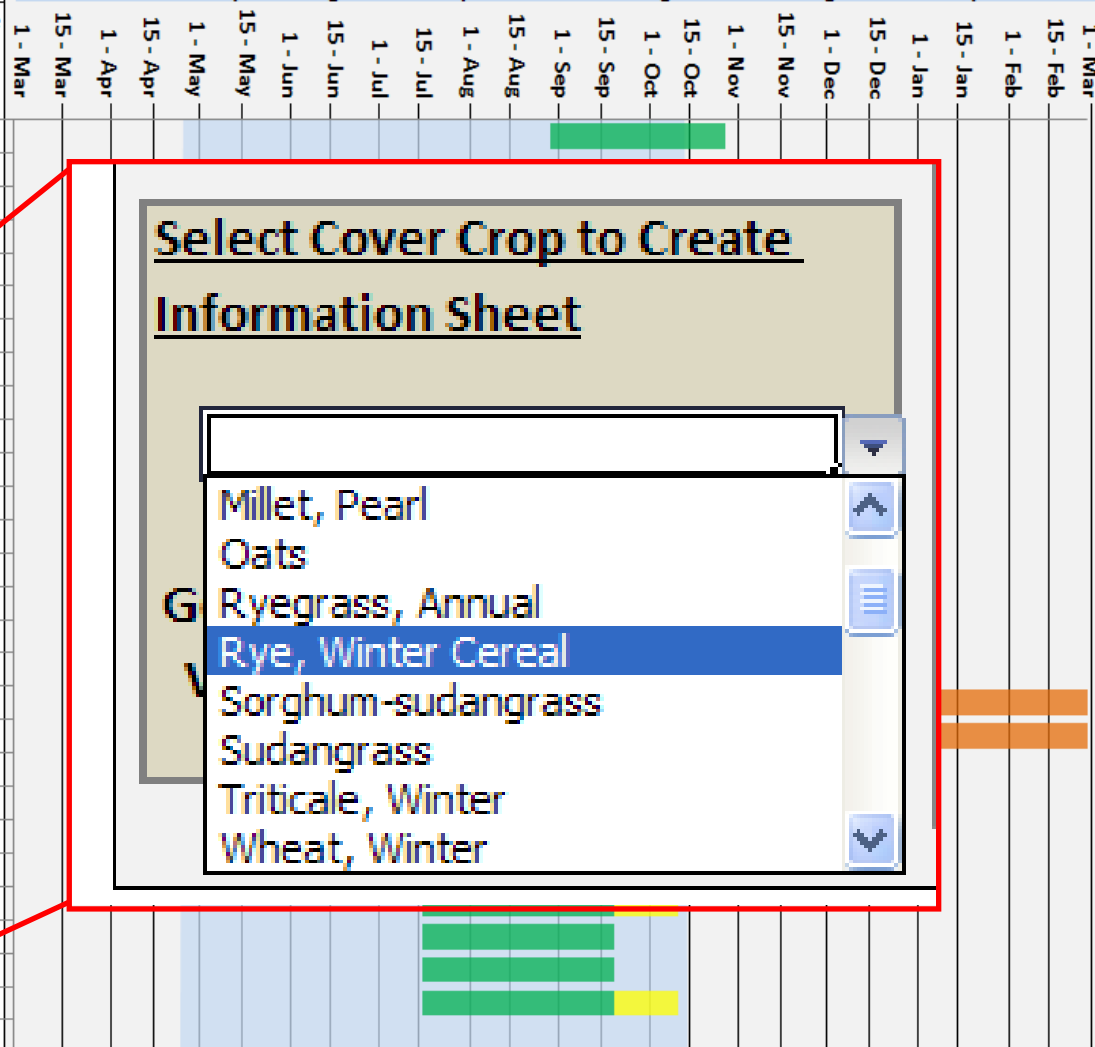
Ohio: Hamilton County Seeding Dates

Reliable Establishment

Freeze Risk to Establishment

Frost Seeding

Cash Crop Growing Period: Requires Aerial Seeding or Interseeding of Cover Crop



Select Cover Crop to Create Information Sheet

- Millet, Pearl
- Oats
- Ryegrass, Annual
- Rye, Winter Cereal**
- Sorghum-sudangrass
- Sudangrass
- Triticale, Winter
- Wheat, Winter



Midwest Cover Crops Council - Cover Crop Decision Tool

Note: CTRL F1 Removes/Restores Command Ribbon to Lengthen/Shorten Display

Location Information

State/Province

Ohio

County

Hamilton

Cash Crop Information

Crop

Corn - Grain

Plant Date

April

27

Harvest Date

October

15

Field Information

Soil Drainage Class

Somewhat Poorly Drained

Artificial Drainage

Tiles, Ditches, etc.

Yes

Flooding/Ponding

No

Cover Crop Attributes

#1 Nitrogen Scavenger

#2 Weed Fighter

#3 Lasting Residue

Select Cover Crop to Create Information Sheet

Rye, Winter Cereal

Go to Information Sheet Tab to View Cover Crop Information

Cover Crop Attribute Ratings

0 - Poor, 1 - Fair, 2 - Good

3 - Very Good, 4 - Excellent

Lasting Residue

Weed Fighter

Nitrogen Scavenger

Nonlegumes

Brassicas

Legumes

Mixes

Barley, Winter 3 3 4

Millet, Japanese 4 3 3

Millet, Pearl 4 3 2

Oats 4 4 2

Ryegrass, Annual 3 3 3

Rye, Winter Cereal 4 4 4

Sorghum-sudangrass 4 3 3

Sudangrass 4 3 3

Triticale, Winter 3 3 3

Wheat, Winter 3 3 3

Rapeseed/Canola 3 3 2

Clover, Berseem 2 3 2

Clover, Crimson 2 3 2

Clover, Red 2 3 2

60% A Ryegr/40% OSR 3 3 2

60% Cr Cl/40% A Ryegr 2 3 2

60% Cr Cl/40% Oats 2 3 2

50% HV/50% WC Rye 3 3 2

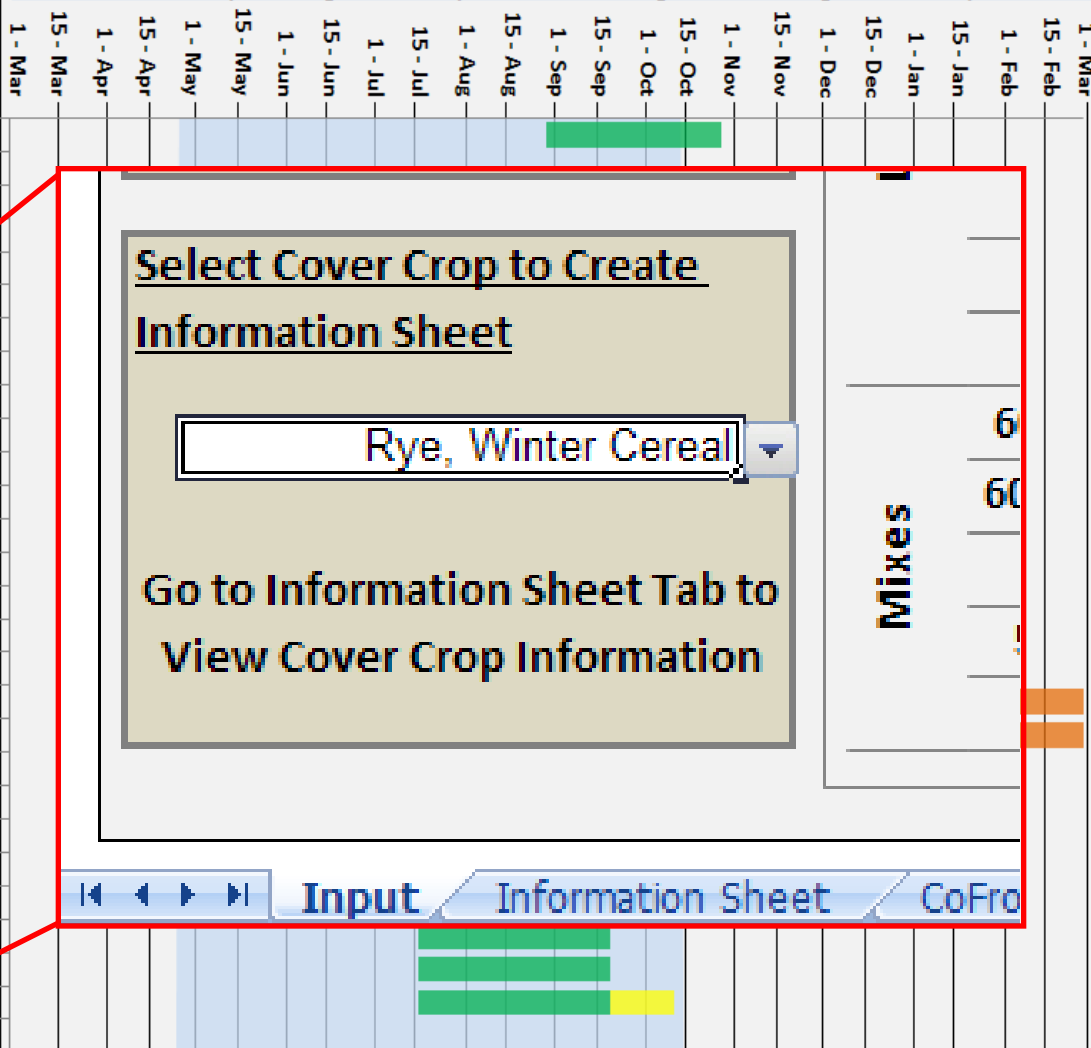
Ohio: Hamilton County Seeding Dates

Reliable Establishment

Freeze Risk to Establishment

Frost Seeding

Cash Crop Growing Period: Requires Aerial Seeding or Interseeding of Cover Crop



Select Cover Crop to Create Information Sheet

Rye, Winter Cereal

Go to Information Sheet Tab to View Cover Crop Information

Input

Information Sheet

CoFrostFreeze

States

Calculations

PlantData

Indiana

Iowa

Ohio

Planting Information

Planting Depth: ¾-2 Inches
Seeding Rate - Drilled: 60-120 lb./A PLS
Seeding Rate - Broadcast: 75-150 lb./A PLS
Seed Count: 18,000 Seeds/lb.
Frost Seed: No
Fly-Free Date: No
Innocation Type:

Performance and Roles

Legume Nitrogen Source: No
Total Nitrogen: (lb./A)
Dry Matter: 000-10000 (lb./A/yr.)
Nitrogen Scavenger: Excellent
Soil Builder: Excellent
Erosion Fighter: Excellent
Weed Fighter: Excellent
Good Grazing: Excellent
Quick Growth:: Excellent
Lasting Residue: Excellent
Duration: Very Good
Harvest Value - Forage: Good
Harvest Value - Seed/Grain: Very Good
Cash Crop Interseed: Very Good
Comments: Tolerates triazine herbicides;
one of the latest seeded
cover crops

Additional Information

Additional Information from Managing Cover Crops
Profitably, 3rd Edition, Edited by Andy Clark,
Sustainable Agriculture Network

[Rye, Winter Cereal](#)

Shade: Very Good
Flood: Good
Low Fertility: Excellent

Potential Advantages

Soil Impact
Subsoiler: Very Good
Frees P and K: Good
Loosens Topsoil: Very Good
Soil Ecology
Nematodes: Excellent
Disease: Good
Allelopathic: Excellent
Choke Weeds: Excellent
Other
Attract Beneficials: Fair
Bears Traffic: Very Good
Short Windows: Excellent

Potential Disadvantages

Increase Pest Risk
Weed Potential: Could be a minor problem
Insects/Nematodes: Could be a moderate problem
Crop Diseases: Occasionally a minor problem
Management Challenges
Hinders Crops: Could be a moderate problem
Establishment: Rarely a problem
Till Kill: Occasionally a minor problem
Mow Kill: Could be a minor problem
Mature Incorporation: Could be major problem

Comments Pro/Con: Can become a weed if tilled at
wrong stage; best if killed
early; not recommended
before corn; mow-kills after
heading

There are no special considerations

Web links to information on using Cover Crops in

Location: Ohio - Hamilton County
Cash Crop: Corn - Grain
Plant Date: April 27
Harvest Date: October 15
Cover Crop Selected: Rye, Winter Cereal
Cover Crop Attribute #1: Nitrogen Scavenger
Cover Crop Attribute #2: Weed Fighter
Cover Crop Attribute #3: Lasting Residue
Soil Drainage Class: Somewhat Poorly Drained
Artificial Drainage: Yes
Flooding: No

Planting Information

Planting Depth: ¾-2 Inches
Seeding Rate - Drilled: 60-120 lb./A PLS
Seeding Rate - Broadcast: 75-150 lb./A PLS
Seed Count: 18,000 Seeds/lb.
Frost Seed: No
Fly-Free Date: No
Inoculation Type:

Performance and Roles

Legume Nitrogen Source: No
Total Nitrogen: (lb./A)
Dry Matter: 000-10000 (lb./A/yr.)
Nitrogen Scavenger: Excellent
Soil Builder: Excellent
Erosion Fighter: Excellent
Weed Fighter: Excellent
Good Grazing: Excellent
Quick Growth: Excellent
Lasting Residue: Excellent
Duration: Very Good
Harvest Value - Forage: Good
Harvest Value - Seed/Grain: Very Good
Cash Crop Interseed: Very Good
Comments: Tolerates triazine herbicide
one of the latest seeded
cover crops

Additional Information

Additional Information from Managing Cover Crops
Profitably, 3rd Edition, Edited by Andy Clark,
Sustainable Agriculture Network

[Rye, Winter Cereal](#)

WinterRye.pdf - Adobe Acrobat Professional

File Edit View Document Comments Forms Tools Advanced Window Help

Create PDF Combine Files Export Start Meeting Secure Sign Forms Review & Comment

1 / 8 101% Find

RYE

Secale cereale

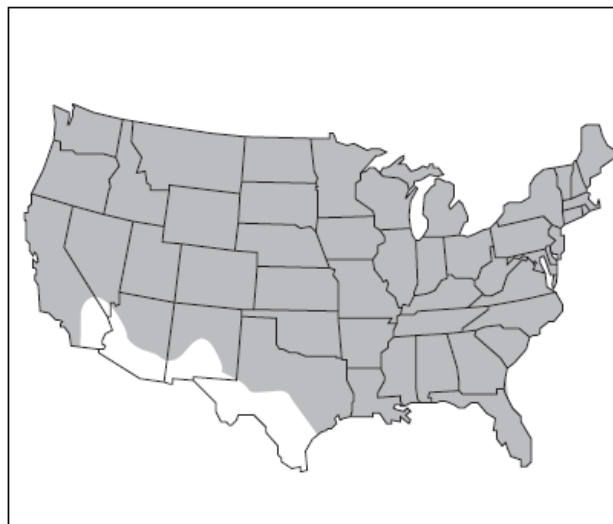
Also called: cereal rye, winter rye,
grain rye

Type: cool season annual cereal
grain

Roles: scavenge excess N, prevent
erosion, add organic matter, sup-
press weeds

Mix with: legumes, grasses or other
cereal grains

See charts, pp. 66 to 72, for ranking
and management summary.



The hardest of cereals, rye can be seeded later in fall than other cover crops and still provide considerable dry matter, an extensive soil-holding root system, significant reduction of nitrate leaching and exceptional weed suppression. Inexpensive and easy to establish, rye outperforms all other cover crops on infertile, sandy or acidic soil or on poorly prepared land. It is widely adapted, but grows best in cool, temperate zones.

Taller and quicker-growing than wheat, rye can serve as a windbreak and trap snow or hold rain-

early; not recommended
before corn; mow-kills after
heading

- A Maryland study credited rye with holding 60 percent of the residual N that could have leached from a silt loam soil following intentionally over-fertilized corn (372).
- A Georgia study estimated rye captured from 69 to 100 percent of the residual N after a corn crop (220).
- In an Iowa study, overseeding rye or a rye/oats mix into soybeans in August limited leaching loss from September to May to less than 5 lb. N/A (313).

Cover Crop Information Sheet

Considerations for using Rye, Winter Cereal in Ohio

There are no special considerations

Web links to information on using Cover Crops in Ohio can be found at: <http://mccc.msu.edu/states/Ohio.html>

Location: Ohio - Hamilton
Cash Crop: Corn - Grain
Plant Date: April 27
Harvest Date: October 15
Cover Crop Selected: Rye, Winter Cereal
Cover Crop Attribute #1: Nitrogen Scavenger
Cover Crop Attribute #2: Weed Fighter
Cover Crop Attribute #3: Lasting Residue
Soil Drainage Class: Somewhat Poor
Artificial Drainage: Yes
Flooding: No

Planting Information

Planting Depth: 3/4-2 in
Seeding Rate - Drilled: 60-120 lb/acre
Seeding Rate - Broadcast: 75-150 lb/acre
Seed Count: 18,000 seeds/lb
Frost Seed: No
Fly-Free Date: No
Innoculation Type:

Performance and Roles

Legume Nitrogen Source: No
Total Nitrogen: (0-100 lb/acre)
Dry Matter: 000-10000 (lb/acre)
Nitrogen Scavenger: Excellent
Soil Builder: Excellent
Erosion Fighter: Excellent
Weed Fighter: Excellent
Good Grazing: Excellent
Quick Growth: Excellent
Lasting Residue: Excellent
Duration: Very Good
Harvest Value - Forage: Good
Harvest Value - Seed/Grain: Very Good
Cash Crop Interseed: Very Good
Comments: Tolerates traffic
one of the late
cover crops

Additional Information

Additional Information from Managing Cover Crops

MCCC - Ohio - Windows Internet Explorer

http://mccc.msu.edu/states/Ohio.html

File Edit View Favorites Tools Help

Google Search

MCCC - Ohio

Links to state specific literature

OHIO STATE UNIVERSITY Ohio State University Fact Sheets

- [Using Cover Crops to Convert to No-till](#) (Hoorman, Islam, Sundermeier, and Reeder)
- [The Biology of Soil Compaction](#) (Hoorman, Carlos de Moraes Sá, and Reeder)
- [Sustainable Crop Rotations with Cover Crops](#) (Hoorman, Islam, and Sundermeier)
- [Utilizing Cover Crops in Vegetable Production Systems](#) by Alan Sundermeier
- [Cover Crop Fundamentals](#) by Alan Sundermeier
- [Oilseed Radish Cover Crop](#)
- [Value of Legumes for Plowdown Nitrogen](#)
- [Forage Legumes for Temporary Soil Cover](#)
- [Soil Quality Test Kit](#) - A simple test for active organic matter as a measure of soil quality by Rafiq Islam, Ph.D. and Alan Sundermeier
- [Value of Legumes for Plowdown Nitrogen](#) (Extension Fact Sheet) by W. H. Schmidt, D. K. Myers and R. W. Van Keuren

On-farm Research Reports

- [Tillage System plus Soybean Cover Crop Effect on Corn Following Wheat](#)
- [Effects of Cover Crops and Tillage on Corn Production in Wheat Stubble](#)
- [Cover Crop Contribution to Ground Cover, Soil Nitrate, and Corn Production](#)
- [Cover Crop Comparisons](#)

Next Steps

■ Continue development and validation with Indiana, Ohio and Iowa teams:

- University Extension Educators
- University Researchers
- NRCS State Agronomist
- Crop Advisors
- Seed Suppliers
- Farmers

• Identify development and validation teams for other states/provinces

• Schedule development meetings

MCCC Cover Crop Decision Tool: Guidance for Cover Crop Selection

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Questions?