Project Overview

Project Information	
Project Title	
Protocol *(if applicable)*	
Year	
Preferred Point of Contact	
Producer-Led Watershed Group *(if applicable)*	

Participants: List the farmers, collaborators and partners participating in this project.

Contact Information				
Farm / Organization Name	**First & Last Name**	**Phone**	**Email**	**Preferred Method of Contact** *(Check one)*
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email
				☐ Text ☐ Phone Call ☐ Email

Field Name: **Year:**

Cover Crop Biomass Data Sheet

Project Name		**Participant Name**	
Field ID		**People collecting data**	
Sampling Time *(select one)*	☐ fall ☐ spring	**Sampling date:**	
Sampling Method *(select one)*	Quadrat: ☐ 2ftx2ft ☐ Row length (1-ft of row across 4 adjacent rows) ☐ 3ftx3ft ☐ Other (include sample area and units): _____		
Data collected *(select all)*	☐ photos ☐ height ☐ forage quality ☐ moisture ☐ nutrient concentrations		
Observations, notes & in-field variability. *Take special note of in-field variability or patterns of cover crop biomass and volunteer wheat as this can influence trial results. If helpful, indicate on map.*			

Additional notes:

- When recording fresh biomass weights, record to as many decimals as the scale allows to provide for greater accuracy.
- Submit data collection sheets, photos, and lab analysis results at the end of season.
- Fill out as many data tables as you require for your research project and trial design

Field Name: **Year:**

COVER CROP BIOMASS DATA					
Required				Optional	
Plot ID (Ex: "CC1")	Sub sample	Fresh biomass weight (lb)	Average fresh biomass weight (lb)	Green Cover (%) (Estimate using Canopeo or submit photo)	Height (in) by species
_____	a				
	b				
	c				
_____	a				
	b				
	c				
_____	a				
	b				
	c				
_____	a				
	b				
	c				

Field Name: **Year:**

COVER CROP BIOMASS DATA					
Required				Optional	
Plot ID (Ex: "CC1")	Sub sample	Fresh biomass weight (lb)	Average fresh biomass weight (lb)	Green Cover (%) (Estimate using Canopeo or submit photo)	Height (in) by species
_____	a				
	b				
	c				
_____	a				
	b				
	c				
_____	a				
	b				
	c				
_____	a				
	b				
	c				

Field Name: **Year:**

Cover Crop Treatment Details: Cover Crop Species Diversity Following Corn Silage

The following cover crop management information varied across your field based on this research project. Complete the following questions and any other important cover crop management information that could have influenced results and the outcomes of the research project.

	Single species (SC)			**Multispecies (MC)**		
	Species *See list of examples or write mix name*	**Seeding rate** *(Per species)*	**Rate units** *(lbs/ac, bu/ac, seeds/ac)*	**Species** *See list of examples or write mix name*	**Seeding rate** *(Per species)*	**Rate units** *(lbs/ac, bu/ac, seeds/ac)*
Example species *Cereal (winter) rye* *Winter wheat* *Annual ryegrass* *Oats* *Red clover* *Crimson clover* *Berseem clover* *Hairy vetch* *Radish* *Turnip* *Other (Be specific)*						
Cost ($/ac) per treatment *Include cost per seed and planting (required to conduct economic analysis)*						
How uniform would you describe the cover crop?	☐ Very uniform ☐ Somewhat variable ☐ Fairly uniform ☐ Very variable			☐ Very uniform ☐ Somewhat variable ☐ Fairly uniform ☐ Very variable		
Additional notes and other observations *General reflections / questions / perception of each species*						
How satisfied were you with the results from this cover crop? *Share observations around establishment, growth, overwintering, uniformity, etc that contributed to your degree of satisfaction.*						

Field Name: **Year:**

Additional Cover Crop Management Details

The following cover crop management details would have been the same across the entire trial area and would not have varied based on the treatments explored in this protocol.

Planting date *(If known, MM/DD/YYYY)*	
Planting date category	☐ Frost seeded ☐ Late season interseeded into standing crop ☐ Early season interseeded into standing crop ☐ After crop harvest
Planting method	☐ Drilled ☐ Broadcasted & incorporated ☐ Plane / helicopter ☐ Broadcasted ☐ Drone ☐ Other
Growth stage at interseeding and approximate height	*If the cover crop was interseeded.*
Soil conditions at time of planting	☐ Dry ☐ Somewhat dry ☐ Neither dry or wet ☐ Somewhat wet ☐ Wet
After seeding, within how much time did you receive rainfall?	☐ <2 days ☐ 2-7 days ☐ 1-2 weeks ☐ >2 weeks
If you had rain within a week, approximately how much rain did you receive?	☐ <1 in ☐ 1-2 in ☐ >2 in
Was manure or fertilizer applied to the cover crop?	☐ No ☐ Manure ☐ Synthetic fertilizer
How uniform is the cover crop?	☐ Very uniform ☐ Fairly uniform ☐ Somewhat variable ☐ Very variable
Termination date *(If known, MM/DD/YYYY)*	
Termination timing	☐ Fall / winterkill ☐ Early spring ☐ <2 weeks before planting ☐ At / after planting
Termination method	☐ Winterkill ☐ Herbicide ☐ Harvested ☐ Tillage ☐ Roller crimper ☐ Other
Additional cover crop details / notes	

Field Name: **Year:**

Cover Crop Treatment Details

*If you investigated additional cover crop treatments besides the 1) single species cover crop and 2) multispecies cover crop mix that is included in the **Cover Crop Species Diversity Following Corn Silage** protocol, complete the cover crop management information below for each additional treatment. Make sure to record the appropriate Treatment ID or Treatment Description on the top of the table.*

Treatment ID / Description				
Cover crop species *List all species or cover crop mix name*	***Example species*** *Cereal (winter) rye* *Winter wheat* *Annual ryegrass* *Oats* *Red clover* *Crimson clover* *Berseem clover* *Hairy vetch* *Radish* *Turnip* *Other (Be specific)*	**Species** *See list of examples or write mix name*	**Seeding rate** *(Per species)*	**Rate units** *(lbs/ac, bu/ac, seeds/ac)*
Cost ($/ac) per cover crop treatment *Include cost per seed and planting (required to conduct economic analysis)*				
Planting date *(If known, MM/DD/YYYY)*				
Planting date category	☐ Frost seeded ☐ Late season interseeded into standing crop ☐ Early season interseeded into standing crop ☐ After crop harvest			
Planting method	☐ Drilled ☐ Broadcasted & incorporated ☐ Plane / helicopter ☐ Broadcasted ☐ Drone ☐ Other			
Growth stage at interseeding and approximate height	*If the cover crop was interseeded.*			
Soil conditions at time of planting	☐ Dry ☐ Somewhat dry ☐ Neither dry or wet ☐ Somewhat wet ☐ Wet			
After seeding, within how much time did you receive rainfall?	☐ <2 days ☐ 2-7 days ☐ 1-2 weeks ☐ >2 weeks			

Field Name: **Year:**

If you had rain within a week, approximately how much rain did you receive?	☐ <1 in ☐ 1-2 in ☐ >2 in
Was manure or fertilizer applied to the cover crop?	☐ No ☐ Manure ☐ Synthetic fertilizer
How uniform is the cover crop?	☐ Very uniform ☐ Fairly uniform ☐ Somewhat variable ☐ Very variable
Termination date *(If known, MM/DD/YYYY)*	
Termination timing	☐ Fall / winterkill ☐ Early spring ☐ <2 weeks before planting ☐ At / after planting
Termination method	☐ Winterkill ☐ Herbicide ☐ Harvested ☐ Tillage ☐ Roller crimper ☐ Other
Approximate height at termination *(in)*	
Percent ground cover at termination	☐ 0-20% ☐ 21-40% ☐ 41-60% ☐ >60%
Additional cover crop details / notes	
How satisfied were you with the results from this cover crop? *Share any observations around establishment, growth, overwintering, uniformity, etc. that contributed to your degree of satisfaction.*	

Field Name: **Year:**

Field Management Data Collection Sheet

FIELD INFORMATION	
Farmer Name	
Field Name	
GPS (Lat / Long)	*Recommended to retrieve soils and weather information*
Field description	*Include known sources of variability, slope, etc.*
Pattern tile drainage	☐ Yes ☐ No
Irrigation	☐ Yes ☐ No

SOIL BACKGROUND					
Predominant soil name *Ex. Plano silt loam*					
Soil texture *Check one*	☐ Sand ☐ Loamy sand ☐ Sandy loam	☐ Loam ☐ Silt loam ☐ Silt	☐ Sandy clay loam ☐ Clay loam ☐ Silty clay loam	☐ Sandy clay ☐ Silty clay ☐ Clay	☐ Muck ☐ Unknown
Recent routine soil test (past 3 years)?	☐ Yes ☐ No				
Date of most recent soil test	*Record month and year*				

SOIL LAB ANALYSIS *Complete information below or submit a copy of lab results with data collection sheets.*	
Lab *Ex. AgSource*	
Analysis Method (for P and K) *Ex. Bray*	
pH	
OM (%)	
P (ppm)	
K (ppm)	

Field Name: **Year:**

FIELD HISTORY	
Estimate the number of years this field has been in crop production	
Rotation description *Ex. corn grain (1 yr) – soybean (1 yr) – alfalfa (3 yrs)*	*Include typical number of years in each phase of rotation. Specify if corn is for grain or silage.*
Crop(s) planted in the past 2 years *Specify if corn is for grain or silage.*	2 years ago: Last year:
Did you remove the crop residue after last year's crop?	☐ Yes ☐ No
If alfalfa is in the rotation, include a description of the most recent alfalfa crop.	*Include termination management (month and year), termination method, whether it is incorporated, stand density (poor, fair, or good), and regrowth (in).*
In the past 10 years, how many years has a cover crop been planted?	
Historical tillage *Check one*	☐ Conventional tillage (<15% residue) – *Ex. chisel plow, moldboard, disc* ☐ Reduced tillage (15-30% residue) ☐ Conservation tillage (>30% residue) – *Mulch/vertical tillage* ☐ Conservation tillage (>30% residue) – *Strip tillage* ☐ Rotational no-tillage – *Alternating no-tillage and conservation tillage depending on crop rotation phase* ☐ No-tillage – *Continuous*
How many years has the current tillage practice been used in this field?	
What is the typical tillage timing? *Check all that apply*	☐ Fall ☐ Spring
In the past 10 years, how many years has manure been applied?	
Additional field history details that may influence trial results	

Field Name: **Year:**

Field Management for the Trial Year

Record details for management practices that were consistent across the whole trial area during the previous fall through harvest. Any management practices that varied as part of your trial design will be recorded separately.

CROP DETAILS	
Crop planted	
Planting date *(MM/DD/YYYY)*	
Relative maturity	
Variety *(If known)*	
Row spacing (in)	
Seeding rate	Rate: ☐ lbs/ac ☐ seeds/ac
Seed treatments	*List or submit a photo of seed tag. Recommended for pest-related research projects.*
Planting method description *Ex. no-till corn planter*	
Percent residue at planting	☐ 0-15% ☐ 15-30% ☐ 30-50% ☐ >50%
Field conditions when planted *Ex. very wet*	
Additional planting details that may influence trial results	*Include examples such as variable seeding conditions, seeding depth, crop emergence, etc*
If this field was irrigated, how much was applied during the season? *(in)*	
Cropping season description and other observations	*Include notes about general weather trends, extreme weather events, pest outbreaks, etc.*

Field Name: **Year:**

COVER CROP DETAILS *If there was a uniform cover crop prior to this year's crop or cover crop interseeded uniformly into this year's crop, complete the following details. If not, skip this section.* *Note: for research trials where cover crop management varied across treatments, complete Cover Crop Treatment Data Sheet.*				
Cover crop species *List all species or cover crop mix name*	***Example species*** *Cereal (winter) rye* *Winter wheat* *Annual ryegrass* *Oats* *Red clover* *Crimson clover* *Berseem clover* *Hairy vetch* *Radish* *Turnip* *Other (Be specific)*	**Species** *See list of examples or write mix name*	**Seeding rate** *(Per species)*	**Rate units** *(lbs/ac, bu/ac, seeds/ac)*

Planting date *(If known, MM/DD/YYYY)*	
Planting date category	☐ Frost seeded ☐ Late season interseeded into standing crop ☐ Early season interseeded into standing crop ☐ After crop harvest
Planting method	☐ Drilled ☐ Broadcasted & incorporated ☐ Plane / helicopter ☐ Broadcasted ☐ Drone ☐ Other
Growth stage at interseeding and approximate height	*If the cover crop was interseeded.*
Was manure or fertilizer applied to the cover crop?	☐ No ☐ Manure ☐ Synthetic fertilizer
How uniform was the cover crop?	☐ Very uniform ☐ Fairly uniform ☐ Somewhat variable ☐ Very variable
Termination date *(If known, MM/DD/YYYY)*	
Termination timing	☐ Fall / winterkill ☐ Early spring ☐ <2 weeks before planting ☐ At / after planting
Termination method	☐ Winterkill ☐ Herbicide ☐ Harvested ☐ Tillage ☐ Roller crimper ☐ Other
Approximate height at termination *(in)*	
Percent ground cover at termination	☐ 0-20% ☐ 21-40% ☐ 41-60% ☐ >60%
Additional cover crop details that may influence trial results	*Include details that may have contributed to cover crop growth, such as weather or soil conditions at seeding.*

Field Name: **Year:**

TILLAGE DETAILS
Record tillage details that occurred across the whole field from the previous fall through harvest. If no tillage occurred, skip this section.

	Approximate Date	Number of passes	Approximate Depth (in)	Implement(s) See list of examples	*Example implements*
Tillage pass details					*Vertical till* *Strip till* *Soil finisher* *Chisel plow* *Moldboard plow* *Disk* *Field cultivator* *Ridge till* *Subsoiler / ripper* *Other (Be specific)*

Additional tillage details that may influence trial results	

MANURE *To accurately credit manure, enter previous 2 years of manure application history. If no manure was applied in the previous two years, skip this section. Submit SnapPlus if available and preferred.*

Date Applied *(MM/DD/YYYY)*	**Manure Source** *Dairy, Beef, Chicken, Turkey, Swine, Other (Be specific)*	**Consistency** *Liquid (<4% DM)* *Liquid (4-11% DM)* *Solid (11-20% DM)* *Solid (>20% DM)*	**Rate** *(Include units: gal/ac, t/ac)*	**Application Method** *Surface* *Incorporated within 3 days* *Injected* *Grazing*

Was manure analysis done?	☐ Yes *(Submit with other trial data)* ☐ No
Grazing details *(If applicable)*	*Include animal type, number of animals, average weight, area grazed, dates, etc.*
Additional manure details that may influence trial results	*If incorporated, record how many days between application and incorporation. Include description of manure storage and processing, as this can influence nutrient content.*

Field Name: **Year:**

FERTILIZER, LIME, & FERTILIZER ADDITIVES *If none were applied, skip this section. If SnapPlus records are available, you can submit those records if preferred.*					
	Date Applied *(MM/DD/YYYY)*	**Product** *(Ex. Urea, AMS, Starter: 10-34-0)*	**Rate** *(Include units: gal/ac, lbs/ac)*	**Application Method(s)** *See list of examples*	***Example Application Methods***
Fertilizer					2x2 In-furrow Broadcast Incorporated Surface banding Injection Fertigation Foliar Y-Drop
Lime					
Fertilizer Additives *(Nitrogen stabilizers, biologicals, etc.)*					

If there were more applications than what fits in the table above, list additional applications below following the same format:

Field Name: **Year:**

PEST MANAGEMENT *Herbicides, insecticides, & fungicide. If none were applied, skip this section*					
	Date Applied *(MM/DD/YYYY)*	**Timing** *Choose burndown, pre, post, or 2nd post for herbicides and specify crop growth stage for non-herbicides*	**Product**	**Rate** *(Include units)*	**Application Method**
Herbicide					
Insecticide *Foliar and soil*					
Fungicide					

If there were more applications than what fits in the table above, list additional applications below following the same format:

Field Name: **Year:**

Yield Data Collection Sheet

CORN YIELD DATA				
Field Name				
Harvest Date *(MM/DD/YYYY)*				
Method of yield data collection *Select one*	☐ Calibrated yield monitor	☐ Weigh wagon	☐ Plot combine	☐ Hand harvest
Record additional information or observations regarding harvest, harvest conditions or yield data that would be valuable to report.				

Instructions for Plot Level Yield Data:

Yield Monitor: Participants using a calibrated yield monitor to collect trial data can either collect yield data per plot and record below or submit a yield shapefile for the entire field. If submitting a yield shapefile for the entire field, you will also need to provide trial layout details (including a plot map, plot dimensions, and where the plots are within the field) to geolocate the trial plots within the yield monitor data and analyze them correctly.

Weigh wagon: If using a weigh wagon, the fresh weight, grain moisture (%), and area of each plot will be measured to calculate yield per acre. Participants can submit this field data and/or convert weights to yield per acre (see UW-Madison Extension On-Farm Research Resources to calculate yields using a weigh wagon).

Field Name: **Year:**

PLOT-LEVEL YIELD DATA					
Plot ID	Weigh Wagon Only		Moisture (%)	Yield	Units (bu/ac or t/ac)
	Weight per plot (lbs)	Area per plot (sq ft)			