



COMET-Farm Training for SWCDs – Animal Agriculture

October 2025



COMET
Farm



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Estimate your whole farm and ranch carbon sequestration and greenhouse gas emissions using COMET-Farm

Describe your farm and ranch management to generate an estimate comparing soil carbon and greenhouse gas emissions between scenarios

Projects



- Estimation of whole farm greenhouse gas emission and carbon sequestration
- Helps compare scenarios
 - If a farm implements X, greenhouse gas emissions will change Y
- For Animal Agriculture, can help up find out how changes in practices related to livestock impact greenhouse gas emissions



- <https://comet-farm.com/home>
- https://comet-farm.com/COMET-Farm_Manual.pdf
 - Animal agriculture instruction begin on page 53



- Input sheet for Dairy
 - <https://cometfarm.freshdesk.com/support/solutions/articles/64000289341-data-entry-steps-for-animal-ag-dairy-project>
- Input sheet for Beef
 - <https://cometfarm.freshdesk.com/support/solutions/articles/64000289339-data-entry-steps-for-animal-ag-beef-project>



- Animal Agriculture BMP training
 - Background on COMET-Farm
 - Navigating the COMET-Farm Website
 - COMET-Farm organization
 - Project walkthrough for livestock
 - Reporting



- 10% of total project acres must be run through COMET-Farm
- No individual requirement for each SWCD
- But COMET-Farm provides benefits
 - More information for grower/producer
 - More precise results
 - Practice implementation may be unique

Registering for a COMET-Farm Account



Welcome

Register for COMET-Farm Account

☐

I have read and agree to the [Terms and Conditions](#)*

☐

Subscribe to COMET-Quarterly Newsletter and Tool Updates

Register Account

Registering for a COMET-Farm Account



Welcome

Register for COMET-Farm Account

First Name (Required) *

Last Name (Required) *

Email (Required) *

Password *

Confirm Password *

Sector

Company /Organization Name (Optional)

☐

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☐

Subscribe to COMET-Quarterly Newsletter and Tool Updates

Register Account

Email needs to be
verified before
continuing.



Guide: Select Accounting Activities



Cropland, Pasture, Range, Orchards/Vineyards:

Uses DayCent to account for soil-related emissions resulting from management practices such as planting dates, tillage, and fertilizer application. Emission estimates will only relate to soil-related emissions within the defined entity or entities (i.e., fields, pastures, vineyards, etc.).



Animal Agriculture:

Uses empirical calculations to estimate emissions resulting from livestock management practices, such as how the animals are housed or how manure is handled. Emission estimates will only relate to emissions related to livestock within the defined entity (i.e., heads of cattle, poultry, swine, etc.).



Agroforestry:

Uses empirical calculations to estimate emissions resulting from agroforestry practices such as silvopasture systems, riparian buffers, or windbreaks.



Forestry:

Uses empirical calculations to estimate emissions resulting from forestry management practices such as clear-cut harvesting.



- Feed management (NRCS Code 592)
- Prescribed grazing (NRCS Code 528)



- Livestock populations
- Livestock housing and TMR information
 - Grazing information, lot information, etc.
- Manure management systems
 - Pathways of both solid and liquid manure (if separated)
- BMP information for changing practices

Starting a project – naming, selecting activity



New Project

1

Project Name (required)

Project Notes (optional)

2

Select Accounting Activities [?]

You may select multiple activities within one project; however, reported emissions will be each generated in their own report.

- ☐  **Cropland, Pasture, Range, Orchards/Vineyards**
- ☐  **Animal Agriculture**
- ☐  **Agroforestry**
- ☐  **Forestry**

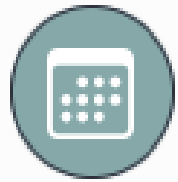
Please select at least one activity.

Cancel

Enter Management



Project "Alliance Test Livestock" Roadmap [?]



Projects



Animal Agriculture



Report



1 Animal Location ?

Select State:

Select a field

Select



Select County:

Select a field

Select





2 Select Animal Categories

Please use the checkboxes below to select your animal category or categories to include in your assessment.

Cattle



Poultry



Swine



Other Ruminants



Other Non-Ruminants





Cattle



- ☐ Grazing Cow-Calf Pairs
- ☐ Grazing Stockers
- ☐ Grazing Bulls
- ☒ Dairy-Heifer Replacements - How many groups?
- ☒ Dairy-Dry Cows - How many groups?
- ☒ Dairy-Lactating Cows - How many groups?
- ☐ Feedlot Cattle

1  group

1  groups

1  group



3 Enter Management for Baseline Scenario [?]

Dairy-Dry Cows (1)

▼ Animal Details



▼ Feed Characteristics



▼ Housing



▼ Manure





^ **Animal Details**



Enter the monthly animal population and average live body weight for Dairy-Dry Cows. Use arrows to copy data across months.

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



Population

0	0	0	0	0	0	0	0	0	0	0	0
--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------



Live Body Weight (lbs)

0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
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Save

Animal agriculture – feed characteristics



Enter the typical monthly feed characteristics for this animal category. If you do not know the required feed characteristics use the feed calculator.
Use the arrows to copy data across months.

Feed Calculator

	Dry Matter Intake	Crude Protein	Fat (EE)	Ash
Jan	0 (lbs/day)	0 (%)	0 (%)	0 (%)
Feb	0 (lbs/day)	0 (%)	0 (%)	0 (%)
Mar	0 (lbs/day)	0 (%)	0 (%)	0 (%)
Apr	0 (lbs/day)	0 (%)	0 (%)	0 (%)



Feed Calculator ?

1. Select the months on top to add the animal diet for the specified months .
2. Use the sorting pills to easily locate the types of feed fed on your farm. Enter the amount of feed per head in pounds per day on an as-fed basis for all feeds in the ration for the specified months. The calculator will determine the dry matter intake and other necessary diet characteristics.
3. When all feedtypes in the ration for the specified months are entered, select Populate Feeds to calculate the feed characteristics of the diet in the main feed table. Continue for all rations until all months have been populated. Feed characteristics can be changed at any time from the main feed characteristic table at any time.

Select Months :

☐ All ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

Sort:

All Feeds

Concentrate -
Energy Rich

Concentrate -
Protein Rich

Forage - Dry

Forage - Fresh

Silages and
Haylages

SEARCH

DENSITY

Feed ↑

Feed Intake - Fresh Weight (lbs/head/day) ↑

Alfalfa - Fresh, late vegetative

0

Alfalfa - Fresh, early bloom

0

Alfalfa - Fresh, midbloom

0

Alfalfa - Fresh, full bloom

0

Alfalfa - Hay, early bloom

0

Alfalfa - Hay, midbloom

0



^ Housing



Enter the % of time spent in each housing type for each month. This includes time spent in multiple barn types, time spent on dry lot, and time spent on pasture. **The percentage of time spent each month must equal 100%.**

% Time Spent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Covered Barn (Flushed, Scraped, Vacuum)	0	0	0	0	0	0	0	0	0	0	0	0
Covered with Pit Storage	0	0	0	0	0	0	0	0	0	0	0	0
Covered with Deep Bedding	0	0	0	0	0	0	0	0	0	0	0	0





^ Manure



1 Is an anaerobic digester used as the primary manure treatment method? ☐ Yes ☒ No

Covered Barn 1(Flushed, Scraped, Vacuum) ^

If using a separator:

Allocate manure solids entering the solid and liquid manure storage or treatment system below. Enter the percent of solids from the solid-liquid separator entering each solid manure treatment system below. Enter the percent of solids from the solid-liquid separator remaining in the liquid fraction to the liquid manure treatment system below.

If not using a separator:

Allocate manure solids entering the storage or treatment from Covered Barn 1(Flushed, Scraped, Vacuum) to the solid and liquid manure storage or treatment system below.

In this section, add information about manure handling, separation, removals, etc.

2 Do you use a solid liquid separator? ☒ Yes ☐ No

3 What is the separator type?

4 Solids removed (%) :



Enter the total exposed surface area of all uncovered storage tanks with a crust:

sqft

[Save](#)

[Go back to Projects](#) [Add Scenario](#) [Continue to Report](#)



After this, you are done entering the baseline now it is time to add a scenario, and to add the BMP implemented in this project.



Copy Management to New Scenario

To copy management details from an existing scenario to a new scenario, select the completed scenario from the list below. All management practices from the completed scenario will be copied to the new scenario. The new scenario may be edited once completed.

- ☐ Continue without copying management
- ☒ Baseline

Cancel

Continue

Choosing “Baseline” allows you to copy over all the management, then just make the changes you want.



Enter new scenario name: ?

Grazing

Cancel

Save



3 Enter Management for Grazing Scenario ?

Dairy-Dry Cows (1)

▼ Animal Details



▼ Feed Characteristics



▼ Housing



▼ Manure



Close

Scenarios for livestock are making the management change to the same information





3 Enter Management for Grazing Scenario ?

Dairy-Dry Cows (1)

▼ Animal Details



▼ Feed Characteristics



▼ Housing



▼ Manure

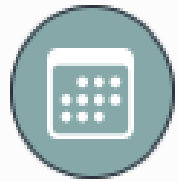


For this scenario, I
implemented rotational grazing
for one animal population

Close



Project "Alliance Test Livestock" Roadmap [?]



Projects

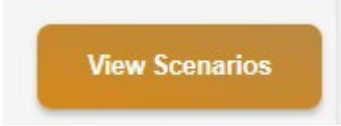


Animal Agriculture



Report



- First, only baseline results will show up
- Click the  button to see the results side by side. Select the name of your scenario.

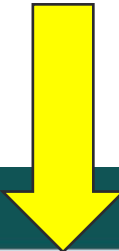
Report – changes from baseline



Emissions
before BMP

Emissions
after BMP

Difference in
emissions



Dairy-Lactating Cows

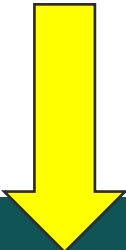
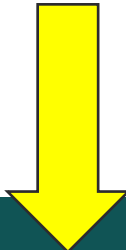
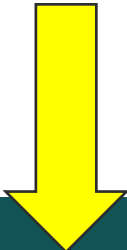
Source	Baseline (500 avg. animals)	Grazing (500 avg. animals)	
	Emissions	Emissions	Change
▼ Dairy-Lactating Cows	2569.3	2218.2	-370.0
> Methane	2433.5	2139.4	-313.1
> Nitrous oxide	135.8	78.9	-56.9

Report – changes from baseline

Emissions
before BMP

Emissions
after BMP

Difference in
emissions



Dairy-Lactating Cows

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▼ Dairy-Lactating Cows	2569.3	2218.2	-370.0
> Methane	2433.5	2139.4	-313.1
> Nitrous oxide	135.8	78.9	-56.9

Negative = reduction in emissions
Positive = increase in emissions

In this scenario, emissions were reduced

Reporting – Project Reporting



Please list each FSA Farm#, on it's own individual line. Please do not list multiple Farm numbers in one box. Please include every Farm# that was enrolled in the program.

	FSA Farm#	State	Conservation Practice	County	GHG Reduction	CO2 Reduction	CH4 Reduction	N2O Reduction

COMET Farm Modeling Tool Version Number

Reporting – Project Reporting

Difference in
emissions



Dairy-Lactating Cows			
Source	Baseline (500 avg. animals)	Grazing (500 avg. animals)	
	Emissions	Emissions	Change
▼ Dairy-Lactating Cows	2569.3	2218.2	-370.0
> Methane	2433.5	2139.4	-313.1
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Report only from the change column

[illegible]

[illegible]



Dairy-Lactating Cows			
Source	Baseline (500 avg. animals)	Grazing (500 avg. animals)	
	Emissions	Emissions	Change
▼ Dairy-Lactating Cows	2569.3	2218.2	-370.0
➤ Methane	2433.5	2139.4	-313.1
➤ Nitrous oxide	135.8	78.9	-56.9

There will likely be no change in CO₂.



Report total change under GHG Reduction

Please list each FSA Farm#, on it's own individual line. Please do not list multiple Farm numbers in one box. Please include every Farm# that was enrolled in the program.





NOTE: For project reporting, reductions should be positive! This is opposite to what COMET-Farm provides in the change column.

Please list each FSA Farm#, on it's own individual line. Please do not list multiple Farm numbers in one box. Please include every Farm# that was enrolled in the program.

	FSA Farm#	State	Conservation Practice	County	GHG Reduction	CO2 Reduction	CH4 Reduction	N2O Reduction

COMET Farm Modeling Tool Version Number

A negative number in COMET-Farm should be reported as positive to USDA.



- The USDA website
 - User guides, office hours, etc.
 - <https://comet-farm.com/home>
- Contact me: Aaron Frankl
 - afrankl@houstoneng.com