

# Using SnapPlus for Nutrient Management

The logo for SnapPlus is displayed within a rounded rectangular frame with a dark red border. The word "Snap" is in a teal color and "Plus" is in a light green color, both in a bold, sans-serif font.

SnapPlus

Wisconsin's Nutrient Management Software

# What is SnapPlus?

- Wisconsin's nutrient management planning software
  - Free download available
  - Lots of training opportunities and tools available



# What is SnapPlus?

- SnapPlus calculates:
  - Crop nutrient recommendations
    - Calculates nutrient credits from biosolids and septage
  - Soil loss
  - Rotational phosphorus index
  - Rotational phosphorus balance



# Why use SnapPlus?

- To manage biosolids and septage as a fertilizer
- Assess fields and determine options for improvement within your application system
  - Reduce nutrient runoff potential
  - Reduce soil loss
  - Work with adaptive management and P trading, not against it



# SnapPlus Overview

- Overview Farm Screen
  - Enter farm basics
    - Crops grown
    - County
  - What is a 'farm'?
    - Can be by farm operator
    - If a small WWTP, can have all 'subfarms' under one 'farm'



# SnapPlus Overview

SnapPlus 20.3 built on 2021-02-18 - MMSD Farm

File Import/Export Tools View Help

Save Snapshot

Farm name: MMSD Farm.snapDb

Location: C:\SnapPlus2\MySnapPlusData

Farm Soil Tests SnapMaps Fields Nutrients Cropping Records Reports

Farm: MMSD Farm

FSA code:



Active fields: cropped acres: 158.8 count: 3

No inactive fields

Contact name: MMSD Farm

Phone: 608-222-1201

Address: 1610 Moorland Rd

Cell:

Fax:

City: Madison

eMail:

State: WI

Zip: 53713

URL:

Manure Nutrient Credits

☐ WPDES permitted farm (CAFO)

☒ Do not use 2nd or 3rd year manure credits

☐ Use 2nd year manure credits

☐ Use 2nd and 3rd year manure credits

Document spreader calibration methods

Add Default Crops

Select any crops you might grow for this operation

Unselected Crops

Search...

Alfalfa  
Alfalfa (1st cut) to Corn grain  
Alfalfa (1st cut) to Corn silage  
Alfalfa (1st cut) to Corn silage to small grain cover  
Alfalfa (1st cut) to mixed small grain legume forage  
Alfalfa (1st cut) to Snapbean  
Alfalfa (1st cut) to Sorghum-soybean forage (milage)  
Alfalfa (1st cut) to Sorghum-sudangrass  
Alfalfa (1st cut) to Soybean  
Alfalfa (grassy, yr 3+)  
Alfalfa Seeding Fall  
Alfalfa Seeding Spring  
Alfalfa to annual cover crop  
Alfalfa to small grain cover crop  
Alfalfa, fall killed  
Alfalfa/Brome  
Alfalfa/Brome Seeding Fall  
Alfalfa/Brome Seeding Spring  
Alfalfa/Brome, fall killed  
Alfalfa/Grass  
Alfalfa/Grass Seeding Fall  
Alfalfa/Grass Seeding Spring  
Alfalfa/Grass to annual cover crop

Selected Crops

Corn grain  
Soybeans 7-10 inch row

Farm Narrative:

Annual notes for crop year: 2021

Select counties for the field locations for this operation

Unselected Counties

Search...

Adams  
Ashland  
Barron  
Bayfield  
Brown  
Buffalo  
Burnett  
Calumet  
Chippewa  
Clark  
Columbia  
Crawford  
Dodge  
Door  
Douglas  
Dunn  
Eau Claire  
Florence  
Fond du Lac  
Forest

Selected Counties

Dane

# SnapPlus Overview

- Soil test entry
  - DATCP approved lab for sample analysis
    - Provide SnapPlus compatible document for uploading
  - Uploading soil tests provides field numbers that will be used in SnapMaps



# SnapPlus Overview

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Subfarm: Show all fields. \* Field: 01 Farm name: MMSD Farm.snapDb Location: C:\SnapPlus2\MySnapPlusData

Farm Soil Tests SnapMaps Fields Nutrients Cropping Records Reports

Soil test history for field: 01

Test Date	Soil Test Lab	Lab Number
2018-04-09	UW Soil & Plant Analysis Lab	6320

Individual soil test samples for test date: 2018-04-09

Sample ID	pH	OM (%)	P (ppm)
1	6.4	3.9	
10	7.2	3.3	
11	6.9	4.1	
12	6.5	2.0	
13	6.7	2.2	
14	6.4	2.4	
2	6.8	3.8	
3	6.8	3.5	
4	6.8	3.7	
5	6.9	4.2	
6	6.6	3.0	
7	6.7	3.8	
8	6.9	3.4	
9	7.0	3.2	

Import Soil Test: MMSD Farm

The SnapPlus import function assumes that the import file has data from only one farm, and that farm Multiple fields per import file is OK.

C:\SnapPlus2\Import\WMSDTestImport.xlsx

Right-click on column headers for single or multi-cell editing of selected cells.

Lab Name	Lab Number	Sample Date	Farm Name	Field Name	Size (acres)	Plow Depth (inches)	Sample Name	pH	OM	P	K	BpH	Ca
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	1	6.4	3.9	45	125	6.7	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	2	6.8	3.8	65	110	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	3	6.8	3.5	69	110	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	4	6.8	3.7	67	88	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	5	6.9	4.2	145	130	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	6	6.6	3.0	96	150	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	02	70.00	6	7	6.7	3.8	80	119	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	8	6.9	3.4	88	130	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	9	7.0	3.2	90	150	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	10	7.2	3.3	60	120	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	11	6.9	4.1	96	118	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	12	6.5	2.0	40	90	7.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	13	6.7	2.2	45	85	0.0	0.0
UW S...	6320	09-Apr-2018	MMS...	03	70.00	6	14	6.4	2.4	42	89	6.6	0.0

☐ Overwrite existing data

Import To SnapPlus

0 records imported

Save to Excel




# SnapPlus Overview


- SnapMaps
  - Online mapping tool that's connected to SnapPlus
  - Shows spreading restrictions
    - Water bodies
    - Restrictive soils
    - Community wells
  - Biosolids or septage layers not included at this time



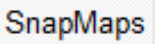

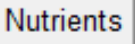
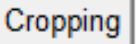
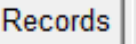
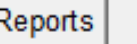


# SnapPlus Overview





SnapPlus 20.3 built on 2021-02-18 - MMSD Farm

File Import/Export Tools View Help  **Save Snapshot**

 Subfarm: Show all fields. \* Field: 01 Farm name: MMSD Farm.snapDb  
Group: Show all fields. Location: C:\SnapPlus2\MySnapPlusData

 Farm  Soil Test  SnapMaps  Fields  Nutrients  Cropping  Records  Reports

2021 < < Upload year > > Data exchange options

 Upload  Website  Download  Refresh

Upload complete: 16:16:56

total records.

**SnapMap Fields** | SnapMap Restrictions | SnapMap Acres | SnapMap Soils | SnapMap Features

ALL	Exists	Watershed	303d or O/ERW	Subfarm	Field Name	Field County	Field
▶	Yes	Lake Monona-Yahara River		MMSD South ...	01	Dane	
	Yes	Cherokee Lake-Yahara Ri...		MMSD North P...	02	Dane	
	Yes	Cherokee Lake-Yahara Ri...		MMSD North P...	03	Dane	

## SnapMaps 20













Drawing Tools ▾











PDF Creation ▼

Map Legend | **Field Properties** | Field List

- Farm Layers** ☐ Turn on/off all

  - ☐ ☐  Soil samples
  - ☐ ☐  Tile lines
  - ☒ ☐  Not farmed
  - ☒ ☐  Grass filter area
  - ☐ ☐  Vegetated buffer
  - ☐ ☐  Non-metallic mine
  - ☒ ☐  Water
  - ☐ ☐  Sinkhole/other karst feature
  - ☐ ☐  Other

☒ ☐ **Fields**  


  - ☒ ☐  Drinking well
  - ☐ ☐  Public well
  - ☐ ☐  Irrigation well
  - ☐ ☐  Sinkhole
  - ☐ ☐  Non-metallic mine
  - ☐ ☐  Fractured bedrock
  - ☐ ☐  Other direct conduit
  - ☐ ☐  Tile outlet
  - ☐ ☐  Tile inlet
  - ☐ ☐  County Defined Karst



# SnapPlus Overview

- Field screen
  - Once SnapMaps info is downloaded back to SnapPlus
    - Verify information
    - Import information -> updates field screen

SnapPlus 20.3 built on 2021-02-18 - MMSD Farm



File Import/Export Tools View Help  Save Snapshot

Subfarm: Show all fields. \* Field: 01 Farm name: MMSD Farm.snapDb  
Group: Show all fields Location: C:\SnapPlus2\MySnapPlusData

Farm Soil Tests SnapMaps Fields Nutrients Cropping Records Reports

Fields Subfarms Groups

[Right-click on column headers for single or multi-cell editing of selected cells.](#)

  Spreadable Acres Field Problems

ALL	Show inactive fields	Active	Field Name	Sub Farm	Fsa Tract #	Fsa Field #	Size (acres)	County	Soil Map Symbol (critical)	Soil Series Name (critical)	Soil Map Symbol (pre-dominant)	Soil Series Name (pre-dominant)	Field Slope (%)
▶	01	<input checked="" type="checkbox"/>		MMSD South Property			70.00	Dane	DsC2	DRESDEN	KeB	KEGONSA	
	02	<input checked="" type="checkbox"/>		MMSD North Property			70.00	Dane	GwD2	GRISWOLD	PnB	PLANO	
	03	<input checked="" type="checkbox"/>		MMSD North Property			70.00	Dane	MdC2	MCHENRY	ScB	ST. CHARLES	

# SnapPlus Overview

- Nutrients
  - Built in calculator to convert biosolids and septage analysis to agronomic numbers



# The Metrogro Program

Spring 2020 Metrogro Analysis per 1,000 gallons:

**N – P – K**

**22.3 – 23.0 – 2.1**

If using SnapPlus as your planning tool, you will need the following information:

% Solids	5.21
TKN	8.76
NH3	3.82
K	0.50
Total P	2.86
Density	8.45

Note about SnapPlus:

Make sure the MRTN (maximum return to nitrogen) rate is set to 0.05. The program typically defaults to a higher MRTN rate, which assumes you are paying the going rate for nitrogen. Since the nitrogen applied through a Metrogro application is free to the farmer, use the 0.05 MRTN rate to allow maximum nitrogen application. More information on this topic can be found at

<https://uwlax.soils.wisc.edu/pubs/mrtm>

Madison Metropolitan Sewerage District



# SnapPlus Overview

+

-

N, P2O5, K2O & S values are for first year available nutrients in  
lbs/unit solid or lbs/1000 gallons

Source Name	Nutrient Type	N surface	N incorp	N inject	P2O5	K2O	S
Biosolid Liquid	Biosolid, liquid	13.9	22.3	22.3	23	2.1	0
Biosolid Solid	Biosolid,						0

Biosolid analysis entry

This calculator converts biosolid lab analysis reports to the proper units for use in SnapPlus. The results shown in the grid below will be inserted as the available nutrient values for this nutrient source.

Source name: Biosolid Liquid, year 2020  
Source type: Biosolid, liquid

% Solid	5.21	
Total Kjeldahl Nitrogen (TKN)	8.76	% dry matter
Ammonia Nitrogen (NH3)	3.82	% dry matter
Organic Nitrogen	4.9	% dry matter
Potassium (K), Total recoverable	0.5	% dry matter
Total Phosphorus (P)	2.86	% dry matter
Density	8.45	lbs/gallon

Available nutrients (lbs/1000 gallons)				
	N Surface	N Incorporated	P2O5	K2O
Application year	13.9	22.3	23	2.1
Second year	2	2	0	0
Third year	0.9	0.9	0	0

+

-

Fertilizer name
Monoammonium phosphate (MAP)
Urea
Diammonium phosphate (DAP)
Potassium chloride
Starter

Refresh

OK

Cancel



# SnapPlus Overview

**SO YOU'RE TELLING ME**

**YOU LIKE POOP JOKES**




# SnapPlus Overview

- Cropping screen
  - All the screens up to this point feed into the cropping screen
    - Soil tests
    - Field information
    - Nutrients




# SnapPlus Overview

SnapPlus 20.3 built on 2021-02-18 - MMSD Farm


File Import/Export Tools View Help  Save Snapshot

Subfarm: Show all fields. \* Field: 03 Farm name: MMSD Farm.snapDb  
Group: Show all fields. Location: C:\SnapPlus2\MySnapPlusData

Farm Soil Tests SnapMaps Fields Nutrients Cropping Records Reports

Fast Facts  Explain

Year	Soil Test	pH	OM	P	K	County	Acres	Pred. Soil	Symbol	Group	Texture	Field Rest.
2021	2018-04-09	6.8	2.9	139	100	Dane	70	St. Charles	ScB	L	Silt Loam	yes

[<] 03 Rotation Wizard Calculate all years  Add/Copy/Delete Years -

Crop Year (Fall to Fall)

	2020	2021	2022
Crop	Corn grain	Corn grain	Soybeans 7-10 inch row
Yield Goal	191-210	191-210	66-75
Tillage	Spring vertical tillage	Fall Chisel, no disk	Fall Chisel, no disk
Soil Test Date	2018-04-09	2018-04-09	2018-04-09
Lime Rec	0	0	NA
Irrigation / MRTN info.	<input type="checkbox"/> Irrigated 0.1MRTN	<input type="checkbox"/> Irrigated 0.05MRTN	<input type="checkbox"/> Irrigated
Season notes			
(lbs/acre)			
UW Recommendation	N: 165, P2O5: 0, K2O: 90	N: 190, P2O5: 0, K2O: 90	N: 0, P2O5: 0, K2O: 130
Prior years' extra	-, 0, 0	-, 23, 1	-, 235, 19
Adjusted UW recommendation	165, 0, 90	190, 0, 89	0, 0, 111
1st & 2nd year legume credit	0, -, -	0, -, -	0, -, -
2nd & 3rd year manure credit	0, -, -	0, -, -	0, -, -
This year's manure	0, 0, 0	183, 189, 17	0, 0, 0
This year's fertilizer	170, 23, 91	9, 23, 91	0, 0, 122
Total credits & applications	170, 23, 91	192, 212, 108	0, 0, 122
Over(+)/Under(-) adj UW rec	5, 23, 1	2, 212, 19	0, 0, 11
Annual Total Pl	11	6	5

# SnapPlus Overview

Nutrient Application Planner

Farm nutrient source availability\*

Source name	Nutrient type	Units	N	N Incorp	N Inject	P2O5	K2O	S	DM %	Available annual volume	Planned applications	Remaining volume
Biosolid Liquid	Biosolid, liquid	Gallons	13.9	22.3	22.3	23	2.1	0	5.2	3,000,000	654,480	2,345,520
Biosolid Solid	Biosolid, solid	Cu Yd...	5	6.8	6.8	16.7	0.6	0	25	2,500	1,579	921

\*Values are for first year available nutrients in lbs/ton or lbs/1000 gallons

Total solid: 2,500 1,579 921

Total liquid: 3,000,000 654,480 2,345,520

Field: 01

Soil: DsC2, DRESDEN

Acres: 63.6

Soil Test P: 73

Crop: Corn grain

K: 110

Prev: Soybeans 7-10 inch row

Crop Year: 2021

Field Over(+)/Under(-) Application (lbs/acre)

N 14

P2O5 173

K2O -16

Fall 2020 thru Summer 2021

Apply Nutrient System

Create Nutrient System

Field Restrictions

Manure / Biosolid Applications

Source name	Season	Spread method	Area	Acres applied	Rate	Units	NO <sub>3</sub> Inh.	Actual
Biosolid Liq...	Sp...	Injected	Sp...	63.6	6,500	Gall...	<input type="checkbox"/>	<input type="checkbox"/>

Fertilizer Applications

Source name	Season	Spread method	Area	Acres applied	Rate	Units	Time	Actual
Starter	Sp...	SubSurf...	En...	63.6	100	lbs/...		<input type="checkbox"/>

See guidance message.

Nutrient applications should not be planned on this field because average soil loss exceeds T.


Please explain non-compliant applications:


Apply

Calculate Erosion


Close

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 **Fast Facts**

Year	Soil Test	pH	OM	P	K	County	Acres	Pred. Soil	Symbol	Group	Textu
2020	2018-04-09	6.8	3.3	73	110	Dane	70	Kegonsa	KeB	L	Silt Lo

[<] 01 **Rotation Wizard** Calculate all years  Add/Copy/Delete Years

Crop Year (Fall to Fall):

Crop: Soybeans 7-10 inch row 2020 Corn grain 2021

Yield Goal: 66-75 191-210

Tillage: Fall vertical tillage 2020 Fall vertical tillage 2021

Soil Test Date: 2018-04-09 2018-04-09

Lime Rec: 0 0

Irrigation / MRTN info: ☐ Irrigated ☐ Irrigated 0.05/MRTN ☐ Irrigated ☐ Irrigated

Season notes:

(lbs/acre)

N	P2O5	K2O
0	0	100
140	0	60

UW Recommendation: 0 0 100 140 0 60

Prior years' extra: - -

Adjusted UW recommendation: 0 - -

1st & 2nd year legume credit: 0 - -

2nd & 3rd year manure credit: 0 - -

This year's manure: 0 - -

This year's fertilizer: 0 0 0 9 23 30

Total credits & applications: 0 0 0 154 173 44

Over(+)/Under(-) adj UW rec: 0 0 -100 14 173 -16

**Annual Total Pl:** NA NA

- Application method
  - Surface vs incorporated
  - Incorporated vs injected

**Dominant critical soil details:**

Name: Dresden  
Symbol: DsC2      Slope: 9.0  
Texture: Silt Loam

## Rotation Settings

Start 2020 Years 2

## Contouring

☒ None

☐ On contour

☐ Strip crop

Filter Area

☒ None  
☐ Designed, field edge  
☐ Designed, in field


## Summary 2020 to 2021

Avg soil loss	3.6	t/ac/yr	
Field "T"	3	t/ac/yr	
Avg P Index	4	SCI 0.3	
	P205	K2O	
Removal	130	160	lb/ac
Balance	43	-116	lb/ac

Soil test P is greater than 50 ppm; P2O5 balance should be less than zero lb/acre.


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Fast Facts 

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03 Rotation Wizard Calculate all years  Add/Copy/Delete

Crop Year (Fall to Fall):

	2020	2021	2022
Crop:	Corn grain	Corn grain	Soybeans 7-10 inch row
Yield Goal:	191-210	191-210	66-75
Tillage:	Spring vertical tillage	Fall Chisel, no disk	Fall Chisel, no disk
Soil Test Date:	2018-04-09	2018-04-09	2018-04-09
Lime Rec:	0	0	NA
Irrigation / MRTN info:	<input type="checkbox"/> Irrigated 0.1/MRTN	<input type="checkbox"/> Irrigated 0.05/MRTN	<input type="checkbox"/> Irrigated
Season notes:			
(lbs/acre)			
UW Recommendation:	165		130
Prior years' extra:	-		19
Adjusted UW recommendation:	165		111
1st & 2nd year legume credit:	0		-
2nd & 3rd year manure credit:	0		-
This year's manure:	0		0
This year's fertilizer:	170		122
Total credits & applications:	170		122
Over(+)/Under(-) adj UW rec:	5	23	1
Annual Total P:	11	6	5

Soil test level of P

Farmer's tillage

Application method

- Surface vs incorporated
- Incorporated vs injected

## Dominant critical soil details:

Name: Mchenry

Symbol: MdC2 Slope: 9.0

Texture: Silt Loam

## Rotation Settings

Start 2020 Years 3

### Contouring

- ☒ None
- ☐ On contour
- ☐ Strip crop

### Filter Area

- ☒ None
- ☐ Designed, field edge
- ☐ Designed, in field

## Summary 2020 to 2022

Avg soil loss 5.1 t/ac/yr

Field "T" 5 t/ac/yr

Avg P Index 7 SCI 0.3

	P205	K20	
Removal	205	220	lb/ac
Balance	30	101	lb/ac

Soil test P is greater than 100 ppm so P205 balance should be less than -51 lb / acre.

# SnapPlus Overview

- Records Tab
  - Import excel spreading log
- Reports Tab
  - Can create Adaptive Management or P Trading reports



# SnapPlus Overview

[www.snapplus.wisc.edu](http://www.snapplus.wisc.edu)



**SNAPPLUS**

WISCONSIN'S NUTRIENT MANAGEMENT PLANNING SOFTWARE

SITE MENU



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[HELP AND SUPPORT](#)

## SNAPPLUS NUTRIENT MANAGEMENT SOFTWARE

### WE'RE REMOTING

Due to the UW-Madison campus COVID-19 closure, the SnapPlus team is working remotely. We continue to develop the software, as well as support our users. For support, the best way to contact us is via email ([support@snapplus.wisc.edu](mailto:support@snapplus.wisc.edu)). We will monitor voicemail on our phone line but email will probably get you a faster response. Please use the support address, which the whole team will see, rather than our individual emails. Our earnest wishes for your good health.

**SnapPlus** (Soil Nutrient Application Planner) is Wisconsin's nutrient management planning software.

[SNAPPLUS 20 WEB HELP](#)

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[IMPORTANT NEWS  
ANSWERS \(FAQ\)](#)

[SnapPlus 20.3  
TRAINING SESSIONS](#)

[SNAPPLUS TRAINING  
MANUAL](#)

[Significantly faster than 19.3  
SNAPPLUS 19 WEB HELP](#)

bug fixes.

[Download it here](#)

### TRAINING OPPORTUNITIES

There are no upcoming



# Questions?

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