Relatively simple input data is needed to estimate whole-farm mass balances and associated indicators

Cornell University

Nutrient Management Spear Program

Cornell Nutrient Management Spear Program
Mass Nutrient Balance Calculator Input Sheet
N, P and K imports and exports: 1/1/2021 to 12/31/2021

Producer Contact Information		Data Collection	
Producer name		By	
Farm name		Email	
Address			
County and State			
Phone			
E-mail		Balance year	2021

Farm Information			Watershed	
Total farm acres	250		Primary watershed	
All tillable owned and rented crop and pasture acres	140		Secondary watershed	
Legume acres (perennial and annual) >10% legume	140		Soil Type	
Acres receiving manure (crop and pasture)	100		Primary soil type	Palmyra
Milk marketing co-operative	Organic Valley		Secondary soil type	Honeyoe

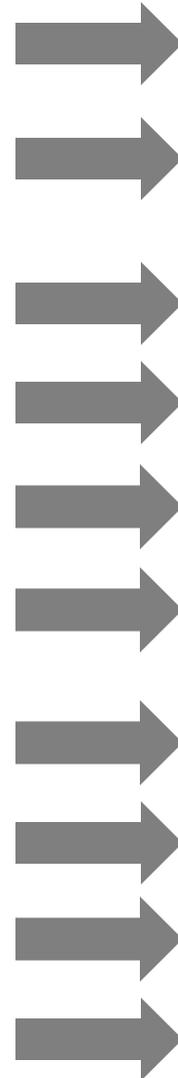|	
Have you completed a Cornell Dairy Farm Business Summary (DFBS) for the balance year?	☐
Have you completed a Farm Credit Business Summary for the balance year?	☐
Are you a Certified Organic producer?	☑
Intensive grazing (grazed at least 3 months/yr, moved to a new pen every 3 days or more)?	☑
Do you have a Comprehensive Nutrient Management Plan (CNMP) for the balance year?	☐
Do you have a Cropware plan for the balance year?	☐
Are heifers raised off-farm? ☐ If yes, what age group?	

Average number and weight of farm livestock

Animal Group		Number	Weight (lbs/head)		
Cattle	Milking and dry cows	48	1400	Dairy cow breed(s)	Holstein
	Heifers 1-2 year	1	1200		
	Heifers <1 year	1	600	Cull rate (%)	14.5
	Calves				
	Bulls and steers				
Other livestock					

→ **General Information**

→ **Farm Crop Production**

→ **Imports, Feed**

→ **Imports, Fertilizer**

→ **Imports, animals**

→ **Imports, miscellaneous**

→ **Exports, milk**

→ **Exports, animals**

→ **Exports, crops**

→ **Exports, miscellaneous**

Relatively simple input data is needed to estimate whole-farm mass balances and associated indicators

Cornell University — NMSP Nutrient Management Spear Program

Cornell Nutrient Management Spear Program
Mass Nutrient Balance Calculator Input Sheet
N, P and K imports and exports: 1/1/2021 to 12/31/2021

Producer Contact Information		Data Collection	
Producer name		By	
Farm name		Email	
Address			
County and State			
Phone			
E-mail		Balance year	2021

Farm Information			Watershed	
Total farm acres	250		Primary watershed	
All tillable owned and rented crop and pasture acres	140		Secondary watershed	
Legume acres (perennial and annual) >10% legume	140		Soil Type	
Acres receiving manure (crop and pasture)	100		Primary soil type	Palmyra
Milk marketing co-operative	Organic Valley		Secondary soil type	Honeyoe

Have you completed a Cornell Dairy Farm Business Summary (DFBS) for the balance year?	☐
Have you completed a Farm Credit Business Summary for the balance year?	☐
Are you a Certified Organic producer?	☑
Intensive grazing (grazed at least 3 months/yr, moved to a new pen every 3 days or more)?	☑
Do you have a Comprehensive Nutrient Management Plan (CNMP) for the balance year?	☐
Do you have a Cropware plan for the balance year?	☐
Are heifers raised off-farm? ☐ If yes, what age group? _____	

Average number and weight of farm livestock

Animal Group		Number	Weight (lbs/head)		
Cattle	Milking and dry cows	48	1400	Dairy cow breed(s)	Holstein
	Heifers 1-2 year	1	1200		
	Heifers <1 year	1	600	Cull rate (%)	14.5
	Calves				
	Bulls and steers				
Other livestock					

Page 1

- Farm contact information
- Acres of land
- Miscellaneous characteristics
- Animal types, numbers, weights, breeds.

Relatively simple input data is needed to estimate whole-farm mass balances and associated indicators

FARM CROP PRODUCTION

Crop name	Area (acres)	% Legume	Manure applied	CP (%DM)	P (%DM)	K (%DM)	Crop type*	Yield (t/a)	DM (%)	Inventory (tons) Beginning year	Inventory (tons) Ending year
Pasture	70	70	✔	23.89	0.37	2.81	Forage	6	29.9	0	0
1st cutting	70	50	✔	12.6	0.27	2.38	Forage	3.14	44.1	0	0
2nd cutting	70	50	✔	15.8	0.4	2.35	Forage	1.08	57.4	0	0
3rd cutting	70	50	✔	15.7	0.5	2.98	Forage	1.41	47.5	0	0
4th cutting	40	50	✔	15.7	0.5	2.98	Forage	0.69	47.5	0	0
			☐								
			☐								
			☐								

* Crop type = "Forage", "Grain" or "Bedding"

IMPORTS

Feeds (purchased)	Tons /year	%DM	CP (%DM)	P (%DM)	K (%DM)	Feed type*	% forage (if TMR)	Inventory Beginning year (as fed tons)	Inventory Ending year (as fed tons)
grain	24	90	18	.34	.85	Grain		0	0
dry hay(228)	34.2	91.83	12.39	0.26	1.91	Forage		0	0
1st baleage(222)	106.89	67.2	10.2	0.14	1.36	Forag▼		0	0
						Forag▼		0	0
2nd baleage(25)	12.04	67.2	10.2	0.14	1.36	Forag▼		0	0
2nd baleage(30)	14,45	67.2	10.2	0.14	1.36	Forag▼		0	0

* Feed type = "Grain", "Forage" or "TMR"

Page 2

Farm crop production

These values will not impact the balance calculation (inside the farm boundaries) but accurate data will help with identification of "issues" or "opportunities to improve"

Feed imports

NMSP

Relatively simple input data is needed to estimate whole-farm mass balances and associated indicators

Purchased fertilizers	Tons/year	% N	% P₂O₅	% K₂O	Protected N source*? If yes, which one?
none					☐
					☐
					☐
					☐
					☐
					☐
					☐
					☐

* Enhanced efficiency fertilizer, e.g. nitrification inhibitors, urease inhibitors, slow release fertilizer

Purchased animals	Type*	Description	Number	Weight/hd (lbs)
none				

* Type = "Dairy", "Beef", "Swine", "Poultry", "Goats", "Sheep" or "Horses"

Bedding, manure and miscellaneous imports	Amount	Units*	% DM (% solids)	N	P	K	Units** (as sampled)
straw 60 bales@600#	18	tons/year					
sawdust 50 10cubic yards	1.8	tons/year					

* Units = "tons/year" or "gallons/year"
** Units = "%", "lbs/ton" or "lbs/1000 gallons"

EXPORTS

Milk sold (lbs/year)	Milk protein (%)	Milk fat (%)	Milk urea nitrogen (MUN) (mg/dl)
835,000	3.08	4.12	8.64

Animals sold	Type*	Description	Number	Weight/hd (lbs)
7	Dairy	holstein cull dairy		1300

* Type = "Dairy", "Beef", "Swine", "Poultry", "Goats", "Sheep" or "Horses"

Page 3

Fertilizer purchases

Animal purchases

Bedding and miscellaneous imports

Milk sold and CP

Animals sold or exported off the farm

Relatively simple input data is needed to estimate whole-farm mass balances and associated indicators

Crops sold	Tons/year	%DM	CP (%DM)	P (%DM)	K (%DM)	Feed type*
60 bales baleage	40.25	49.67	14.7	0.39	2.57	Forage
		Values	average	from	cuttings	
						% forage
TMR						

* Feed type = "Grain", "Forage" or "TMR"

Crops sold or exported off the farm

Manure, compost and other exports	Amount	Units*	% solids	N	P	K	Units** (as sampled)
none							

* Units = "tons/year" or "gallons/year"

** Units = "%", "lbs/ton" or "lbs/1000 gallons"

Manure, compost or other exports