

Nutrient Management Survey

As previously used with a survey of 54 Wisconsin dairy farms:
On Farmer's Ground



Participation in the study is voluntary. All answers to questions in this survey will be kept *strictly confidential*, and the results will only be used in statistical summaries. Individual farm information will not be identified in any publication.

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Adaptation for use elsewhere is welcome.

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BACKGROUND (FILL OUT BEFORE AND AFTER INTERVIEW)

A. Lead interviewer (your) initials: _____

B. Second interviewer initials: _____

C. ID of farm: _____

D. County: _____

E. Date of interview: _____

F. Describe role of person who was interviewed (check box and write additional info if necessary):

- Primary farm operator
- Junior farm operator (son, daughter, partner)
- Hired manager
- Hired farm hand
- Spouse of one above (specify):
- Other (comments) _____

G. Where any other decision makers present?

- herd decision maker
- crop decision maker
- Other (comments) _____

H. Time: started: _____ finished: _____ Total (min) _____

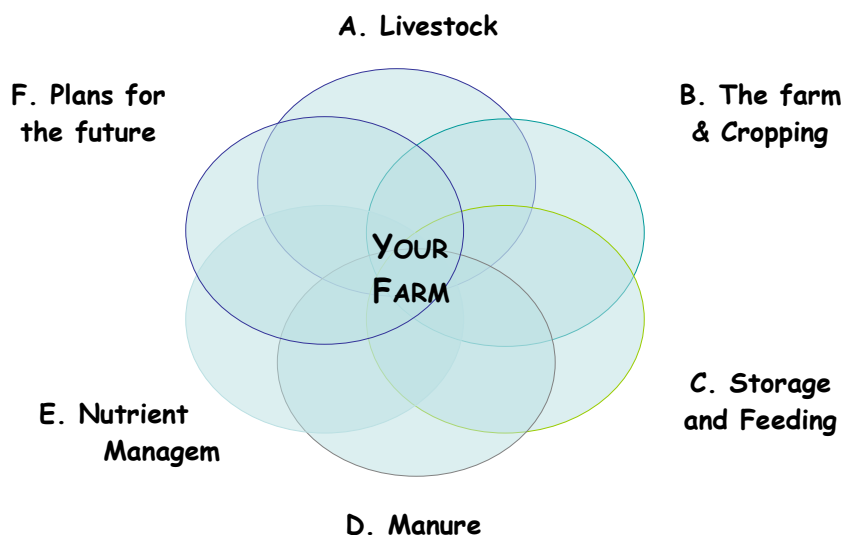
G. Comments on how interview went: _____

Introduction (OVERVIEW)

You may be aware that nutrient build up on some of Wisconsin farms is an increasing problem that can have several environmental impacts, such as pollution of waterways and the atmosphere. This concern will likely lead to the implementation of certain nutrient management related policies. This study will provide research results to help dairy farmers and ag professionals meet current and future nutrient management challenges and help agencies make more informed policy decisions.

The project will consist of three broad phases. The first phase is to get an overview of the different sorts of dairy farms that operate in WI. In the second phase we'll get some more detailed data collection and finally in third phase we intend to have a follow up interview to discuss the data we've collected. Today is first of these phases and so we want to get an overview of your farming operations with regard to the way the nutrients flow through it.

We will begin by asking some basic information about the dairy farm. Then we'll ask about your cropping operations. At the end, I'll have some questions about how you feed, manure and your plans for the future. At the end of this session, we will want to collect feed and milk samples, which will be useful to help us calculate typical dairy diets. At later visits we'll take some manure and soil samples and get an idea of the nutrients that are available for cycling through your crops.



PART A: INFORMATION ABOUT YOUR LIVESTOCK OPERATION

To begin, I would like to get a sense of how this dairy operation is organized and some general information about your herd.

A1. Tell me:

a.	How many dairy cows are you <u>milking</u> right now?	
b.	How many of these are <u>first</u> lactation animals?	
c.	How long is an average lactation period for your cows?	
d.	How many lactations do your cows normally have?	
e.	Roughly how much milk do you ship per lactating cow per day (lbs/cow/day)?	
f.	What's the average % fat content of the milk?	<input type="checkbox"/> _____% <input type="checkbox"/> Not sure
g.	Do you know the average % protein content?	<input type="checkbox"/> Yes _____% <input type="checkbox"/> No
h.	How many <u>dry cows</u> do you currently have?	
i.	CHECK: So altogether this means you have a total of (a + g) dry and lactating cows?	
j.	On average, how long do you dry cows off before freshening?	
k.	In total how many <u>dairy heifers</u> do you currently have?	
l.	How many of these are less than 7 months old (or 600 lbs)?	

A2. What breeds are in your dairy herd?

Breed	Number	<u>ALL</u> this breed (CHECK BOX)
Holstein/Friesian		
Jersey		
Brown Swiss		
Other #1:		
Other #2 :		
Total		

A3. Do you raise any other kinds of livestock on your farm?

- NO → Not even any dairy bulls?
 YES → What are they?

Type of Livestock	Number of animals
Beef cows	
Bulls (dairy and beef)	
Feeder steers or heifers (under 7 months)	
Feeders and other calves (over 7 months)	
Sows	
Pigs	
Sheep or Goats	
Horses	
Poultry (type: _____)	
OTHER (specify: _____)	

A4. How would you describe your milking facilities? (check one)

Stanchion or tie stall barn using:

- Bucket/pails Pipeline Flat parlor

Parlor system:

Size:

- Double 4 Double 6 Double 8
 Double 12 Double 20 Double 24

Type

- Parallel Swing
 Pit Step up

A5. What kind of housing do you use for your MILKING HERD?

Tie Stall -or- Stanchion barn → *could you please tell us the:*

→ **Number of stalls:** _____

→ **Bedding used**

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Corn Fodder	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

Free-stall housing → *could you please tell us the:*

→ **Number of stalls:** _____

→ **Bedding used:**

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Corn Fodder	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

Bedding pack housing in new or converted building(s)

→ Capacity: _____ cows

Other _____

A6. What kind of housing do you have for DRY COWS?

- None Same as milking cows (in: _____)
- Outside with bedding back (in: _____)
- Outside with loose housing (in: _____)
- Own barn: stanchion freestall barn loose (in: _____)
- Other _____

➔ What bedding do you use for DRY COWS?

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Corn fodder	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

A7. What kinds of housing do you have for your SPRINGING HEIFERS?

- None Same as milking/dry cows (in: _____)
- Outdoor pens with shelter (in: _____)
- Own Barn: stanchion freestall barn loose (in: _____)
- Other _____

➔ What bedding do you use for SPRINGING HEIFERS?

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Other#1	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

A8. What kind of housing do you have for your YOUNG HEIFERS AND CALVES (less than 2 months)?

- None Same as milking/dry/springers (in _____)
- Hutches _____
- Pens with shelter: indoor outdoor _____
- Other _____

➔ What bedding do you use for YOUNG HEIFERS AND CALVES?

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Corn Fodder	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

A9. Do you have any other groups of livestock in housing?

- No → go to **A10** Yes → continue

a. What kind of livestock? _____

b. What kind of housing? _____

- Same as dry/milking cows/springers/young heifers
 None Same as milking/dry/springers/calves (in _____)
 Pens with shelter: indoor outdoor _____
 Other _____

➔ **What bedding do you use here?**

<input type="checkbox"/>	Straw	&	<input type="checkbox"/>	Sand	&	<input type="checkbox"/>	Corn fodder	&
<input type="checkbox"/>	Manure solids	&	<input type="checkbox"/>	Mattresses	&	<input type="checkbox"/>	Other#2	&

*The next series of questions relate only to **LACTATING COWS** in the herd.*

A10. Do you ever let your **LACTATING COWS have access to any pastures or outdoor exercise areas (other than barnyard)?**

- NO → skip this and next page and go to question **A16**
 YES → continue to **A11**

A11. During the grazing season do you count on pastures as a significant source of forage for your **LACTATING COWS?**

- YES → skip to next page **A12**
 NO → continue

a) Why do you let them outside?

- for exercise other _____

b) What kind of fields/yard are they going to?

- grass soil concrete other _____

c) In each season, how many hours a day would you say is spent outdoors by your **LACTATING COWS** in these areas?

	Hours	Where
Fall:		
Winter:		<input type="checkbox"/> (same as above)
Spring:		<input type="checkbox"/> (same as above)
Summer:		<input type="checkbox"/> (same as above)

*Now skip the next section and go to straight to question **A16**.*

A12. What month(s) make up your grazing season? _____

A13. a) During the grazing season, on average, approximately how much of the forage ration do pastures account for?

<input type="checkbox"/> 25% or less	<input type="checkbox"/> 26% - 50%
<input type="checkbox"/> 51% - 75%	<input type="checkbox"/> 75% or more

b) How often do you usually move your grazing **LACTATING COWS** to fresh pastures (or a new paddock)?

<input type="checkbox"/> Twice a day or more	<input type="checkbox"/> once a day	<input type="checkbox"/> every 2-3 days
<input type="checkbox"/> every 4-6 days	<input type="checkbox"/> once a week	<input type="checkbox"/> less than once a week

A14. Do you let **LACTATING COWS** out for any other reasons other than to graze

NO → skip to **A15**

YES → continue

a) Why do you let them outside?

for exercise other _____

b) What kind of fields/yard are they going to?

grass soil concrete other _____

A15. In each season, how many hours a day are spent outside by your LACTATING COWS in these areas?

	Hours	Where
Fall:		
Winter:		<input type="checkbox"/> (same as above)
Spring:		<input type="checkbox"/> (same as above)
Summer:		<input type="checkbox"/> (same as above)

The next series of questions relate only to the DRY COWS and HEIFERS and the OTHER LIVESTOCK on your farm.

A16. Do you usually let DRY COWS, HEIFERS OR OTHER LIVESTOCK have access to outdoor pasture or exercise areas (other than the barnyard)?

NO → (CHECK) so you always keep your other animals inside?

 _____ (now skip to section B1)

YES → What kinds of animals?

All my other animals

<input type="checkbox"/>	Dry Cows	<input type="checkbox"/>	Other dairy	<input type="checkbox"/>
<input type="checkbox"/>	Dairy heifers (< 7/8 months)	<input type="checkbox"/>	Other cattle	<input type="checkbox"/>
<input type="checkbox"/>	Dairy heifers (>7/8 months)	<input type="checkbox"/>	Other livestock	<input type="checkbox"/>

A17. During each season how many hours of a normal day would each animal spend outside?

a) Group # _____

	Hours	Where
Fall		
Winter		<input type="checkbox"/> (same as above)
Spring		<input type="checkbox"/> (same as above)
Summer		<input type="checkbox"/> (same as above)

b) Group # _____

	Hours	Where
Fall		
Winter		<input type="checkbox"/> (same as above)
Spring		<input type="checkbox"/> (same as above)
Summer		<input type="checkbox"/> (same as above)

A18. During the grazing season do you reduce the amount of stored forages fed to your dry cows, heifers or other livestock?

- Yes
- Yes for → *check respective groups below*
- No, I feed 'free choice' but they probably eat less
- No, they get the same ration
- other _____

<input type="checkbox"/>	Dry Cows	<input type="checkbox"/>	Other dairy :
<input type="checkbox"/>	Dairy heifers (< 7/8 months)	<input type="checkbox"/>	Other cattle :
<input type="checkbox"/>	Dairy heifers (>7/8 months)	<input type="checkbox"/>	Other livestock :

PART B: THE FARM BOUNDARIES AND CROPPING OPERATION

Next, I would like to get an idea of the layout of your farm/fields and what you have growing in fields at the moment. We'll do this using the maps that we sent to you prior to our visit or those that we have brought with us. This information will be important for us to understand decisions you make for particular fields and what problems you may face.

B1. Here is a picture of your farm from the air. Can you identify that this is your entire farm?

No → **Could you please show me what's missing?**

Yes

B2. Have you seen a map of your farm like this one before?

No → **Do you have any other sort of maps or diagrams of your farm?** No → *go to B3*

Yes →

i. What kind? _____

ii. Could we get a copy _____ *go to B3*

Yes → **Do you already have a map like this ?**

No → **a. Where have you seen a maps like this?** _____

b. Do you have any other sort of maps or diagrams of your farm? No → *go to B2*

Yes → **i. What kind?** _____

ii. Could we get a copy (s) at a convenient time?

_____ *go to B3*

Yes → **Could we get a copy of it at a convenient time and any other maps you may have ?** _____

_____ *go to B3*

B3. *I'd now like to ask you to help me trace the boundaries of your farm and fields. Be sure to include rented fields as well as those you own. We will give each field a number, then make a note of what was grown in each field this past summer (2009), then talk about the normal crop rotation for the field.*

Map Key

Crop/Feature	Code	Acres		Crop/Feature	Code	Acres
Alfalfa hay	AH			Other grains	OG	
Grass hay	GH			Permanent pasture (not tillable)	PP	
Mixed alfalfa/grass hay	MH			Cropland used as pasture	CP	
Clover	C			Other crops:	O1	
Soybeans	SB			Other crops:	O2	
Corn for grain	CG			Animal exercise area	AEA	
Corn for silage	CS			Milking facility	MF	
Oats	O			Barnyard (not if concrete)	BYD	
Barley	B			Animal housing facilities	AHF	

Crop Rotation Table

Example Field #	Field ID (Farmer)	Crop rotation
F1		
F2		
F3		
F4		
F5		

B4. Are any of these fields rented from someone else?

No Yes (*Indicate which ones and shade or code with "RNT".*)

B5. Overall, which of the following soil textures best describes the soil found on your farm?

<input type="checkbox"/>	Mostly sandy	<input type="checkbox"/>	Mostly silt or loam
<input type="checkbox"/>	Mostly clay	<input type="checkbox"/>	Don't know
<input type="checkbox"/>	Other:	<input type="checkbox"/>	I can find out:

B6. Does the soil type vary a great deal over your farm?

<input type="checkbox"/>	No	<input type="checkbox"/>	Don't know	<input type="checkbox"/>	Yes → In what way? Could you show me on the map? (<i>insert directly on map</i>)
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B7. How often do you usually soil test your crop fields?

<input type="checkbox"/>	Never	<input type="checkbox"/>	Every year
<input type="checkbox"/>	Every two years	<input type="checkbox"/>	Every three years
<input type="checkbox"/>	Every four years	<input type="checkbox"/>	Every five years or more
<input type="checkbox"/>	No pattern to when I soil test	<input type="checkbox"/>	Varies:

B8. When was your most recent test (year)? _____

B9. Can you show me on the map which fields have had soil tests in the last 5 years?

All tested – or -- *indicate which ones by inserting® on map.*

At the end of the interview, could we get copies of these records or could you tell us where we might get copies? _____

Returning to the map, I would now like to ask some more specific questions about your crop production practices.

HAY PRODUCTION **CHECK IF HAY NOT GROWN**

B10. Including year of establishment, how long do you usually leave a hay stand before rotating to another crop or replanting?

Type	Years	Type	Years
Alfalfa/_____		Grass/_____	

B11. When you establish a NEW HAY field do you usually apply manure or commercial fertilizer before planting?

NO → skip to **B13**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply (how soon before planting)?

	Type	Amount	When
Manure			
Commercial fertilizer			

B12. What tillage practices do you usually use to prepare for seeding a new HAY field? No Till _____

B13. Do you usually apply manure or commercial fertilizer to your ESTABLISHED HAY fields?

NO → skip to **B15**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply?

	Type	Amount	When
Manure			
Commercial fertilizer			

B14. In a typical year, what are your approximate HAY yields?

Type	Tons/acre (or)
Alfalfa/_____	
Grass/_____	

B15. In a typical low yielding year, what is your approximate HAY yield?

Type	Tons/acre (or)
Alfalfa/_____	
Grass/_____	

B16. In a typical high yielding year, what is your approximate HAY yield?

Type	Tons/acre (or)
Alfalfa/_____	
Grass/_____	

B18. Do you ever sell excess HAY? – (How often? How much?) Yes No
 sometimes _____

CORN PRODUCTION	<input type="checkbox"/> CHECK IF CORN NOT GROWN
------------------------	--------------------------------------------------

B19. This year (2009) how many acres of the CORN you planted did you harvest as silage and as grain?
 silage_____ acres
 grain_____ acres

B20. Does the amount/proportion you harvest as silage and grain vary greatly from year to year?

No → Continue to **B21** Yes → In what way?_____

B21. Do you usually apply manure or commercial fertilizer before planting your **CORN?**

NO → skip to **B22**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply (how soon before planting?)

	Type	Amount	When
Manure			
Commercial fertilizer			

B22. When you plant **CORN, what tillage practices do you use to prepare the Field?** No Till same as before (for hay) _____

B23. Do you apply manure/fertilizer during the growing season?

NO → skip to **B24**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply?

	Type	Amount	When
Manure			
Commercial fertilizer			

B24. In typical year, what is your approximate **CORN yield?**

Corn harvested as grain:		Bushels/acre
Corn harvested as silage		Tons/acre

B25. In a typical low yielding year, what is your approximate CORN yield?

Corn harvested as grain:		Bushels/acre
Corn harvested as silage		Tons/acre

B26. In a typical high yielding year, what is your approximate CORN yield?

Corn harvested as grain:		Bushels/acre
Corn harvested as silage		Tons/acre

B27. Do you know the plant population? _____ plant/ac No

B28. Do you know the relative maturity index? _____ plant/ac No

B29. Do you ever sell any excess CORN (either silage or grain)? (how much/often?) Yes No Sometimes _____

SOYBEAN PRODUCTION CHECK IF SOYBEANS NOT GROWN

B30. When you plant SOYBEANS do you usually apply manure or commercial fertilizer before planting?

NO → skip to **B31**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply (how soon before planting)?

	Type	Amount	When
Manure			
Commercial fertilizer			

B31. When you plant SOYBEANS, what tillage practices do you usually use to prepare the field? No Till same as before (hay/corn)_____

B32. What manure or fertilizer do you usually apply to your SOYBEAN fields during the growing season?

NO → skip to **B33**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply

	Type	Amount	When
Manure			
Commercial fertilizer			

B33. In a typical year what, is your SOYBEAN yield? _____ Bu/acre

B34. What about in high yielding years? _____ Bu/acre

B35. What about in low yielding years? _____ Bu/acre

B36. Do you ever sell any of your excess SOYBEANS? (How often/much?)

Yes No sometimes All of them _____

OATS/SMALL GRAIN PRODUCTION CHECK IF NOT GROWN

B37. What SMALL GRAINS do you grow?

<input type="checkbox"/>	Oats	<input type="checkbox"/>	Wheat	<input type="checkbox"/>	Barley	<input type="checkbox"/>	Other:
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B38. What do you harvest them for? Forage Grain Straw/bedding,
other: _____

B39. When you plant **SMALL GRAINS do you usually apply manure or commercial fertilizer?**

NO → skip to **B40**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply?

	Type	Amount	When
Manure			
Commercial fertilizer			

B40. What tillage practices do you usually use to prepare for seeding a new **SMALL GRAINS ?** No Till as before _____

B41. Do you usually apply manure or commercial fertilizer to **SMALL GRAINS during the growing season?**

NO → skip to **B44**

YES → a) What do you apply?

b) How much do you apply?

c) When do you apply?

	Type	Amount	When
Manure			
Commercial fertilizer			

B42. In a typical year, what are your approximate **SMALL GRAIN and **STRAW** yields?**

Type	Bushels/acre	Tons /acre
Oats		
Barley		
Wheat		
Other: _____		

B43. In a typical low yielding year, what is your approximate **SMALL GRAIN and **STRAW** yields?**

	Bushels/acre	Tons /acre
Oats		
Barley		
Wheat		
Other: _____		

B44. In a typical high yielding year, what is your approximate **SMALL GRAIN and **STRAW** yields?**

	Bushels/acre	Tons /acre
Oats		
Barley		
Wheat		
Other: _____		

B47. Do you ever sell excess **GRAIN or **STRAW/HAY**? yes no**
 sometimes _____

PASTURES

CHECK IF NOT GROWN

B48. Do you usually apply manure or commercial fertilizer to your PASTURE (excluding directly from the animal)?

- No → skip to **Part C**
- Occasionally → **How often?** _____ years. *continue*
- Yes → *continue*

a) What do you apply?

- Manure _____
- Commercial fertilizer _____

b) How much do you apply? _____

c) When do you apply? _____

d) On what kinds of pastures do you apply manure or commercial fertilizers? _____

*This ends the cropping questions; now we would like to know about
how you store and feed these crops*

PART C: STORAGE AND FEEDING PRACTICES

For each of the following types of feed, please tell me how and where you store them on your farm:

C1. DRY HAY:

- None stored on farm
- Stored in barn / other building (small / square/large /round)
- Stored outside without cover (small / square/large /round)
- Stored outside in bags (small / square/large /round)
- Other _____

C2. SILAGE/HAYLAGE/WET WRAP HAY:

a. silage

- None stored on farm
- Stored in upright or vertical silos _____
- Stored in bunker silos _____
- Stored in bags
- Other _____

b. haylage

- None stored on farm
- Stored in upright or vertical silos _____
- Stored in bunker silos _____
- Stored in bags
- Other _____

C. wet wrap hay

- None stored on farm
- large bags _____
- small bags _____

C3. GRAINS/SOYBEANS:

a. grain

- None stored on farm
- Stored in silos _____
- Stored in grain bins inside/outside buildings _____
- Other _____

b. soybeans

- None stored on farm
- Stored in silos _____
- Stored in grain bins inside/outside buildings _____
- Other _____

C4. Do you have any other major feed storage facilities?

No Yes → *describe* _____

We would like to get a rough idea of how much feed you buy in a typical year.

C5. In a normal (typical) year, how much of the following do you purchase? (Check the one box on each line that best applies)

(*INSERT TYPE AS REQUIRED)	RAISED			BOUGHT		ACTUAL AMOUNT
	ALL	ABOUT 3/4	ABOUT 1/2	ABOUT 3/4	ALL	
FORAGE:						
HAY						
CORN SILAGE						
GRAINS:						
CORN						
*						
*						
PROTEIN:						
SOYBEAN/ SOYBEAN MEAL						
PROTEIN MIX						
MINERAL:						
*						

C6. Is the amount of feed you purchased this year typical? _____

yes no _____

We would now like to talk a bit more specifically about your feeding practices for your lactating herd.

C7. Do you usually feed different groups of LACTATING COWS different rations?

NO → *Skip to question C8*

YES → *continue*

a) How many groups of **LACTATING COWS** are there for different rations? _____

b) How do you separate these groups

- By stage of lactation
- By production level
- By age of cow
- By use of Posilac® (rBST; BGH)
- Other criteria _____

C8. Do you use a TMR?

NO → Skip to **question C9**

YES → **How do you use the TMR?**

a) Do you use it for: one group more than 1 group

b) Are these the: lactating animals only

other livestock only

both

c) Is it: mobile stationary

C9. Could you tell me what you are feeding your (groups of) **LACTATING COWS at the moment?**

Ask if they have this written down somewhere; if yes, ask if you can get a copy.

Insert the following information in the worksheet and sample collection booklet:

C10. How many cows are currently fed this ration? _____

→ *Repeat for each major feed group. (See section **A1 – A3** & **A7- A9** for farmer's likely feeding groups if prompts are required.)*

C11. Are you currently using a consultant to help you to figure out the feed rations for your herd?

- NO → skip to question **C14**
- YES → continue

a) How would you describe this person?

- Independent consultant
- Consultant working at the feed mill or for feed dealer
- Consultant working for my dairy cooperative
- My veterinarian
- Other _____

b) Do you usually pay for their nutritional advice? NO YES

c) Do you usually buy any feed from this consultant? NO YES

C12. Do you usually have the forages you feed tested for nutritional value?

NO or Not sure

YES → **a) How often?** _____

b) Did you interpret the results of the analysis yourself? YES NO →

C15. Do you usually keep production records on individual cows in your herd? NO YES → **What would you estimate was the rolling herd average of your milk cows last year?** _____ lbs /cow/ year

C16. Which of the following practices / technologies do you currently use on your dairy farm?

- a. Balance feed rations at least 4 times a year** Yes No
- b. Milk your cows 3 times a day** Yes No
- c. Use Posilac™ (rBST or BGH) on any of your milking cows** Yes No
- d. Own a computer** Yes No
- e. Use a computer to manage farm records** Yes No
- f. Access internet for farm info** Yes No

PART D: MANURE MANAGEMENT INFORMATION

*We would now like to talk about how you collect, store and spread your manure.
We'll start by talking about the farm buildings.*

D1. Tie Stall/Stanchion Barn? *Not Applicable*

a) How do you collect manure produced in your (see above)?

b) How often do you do this (and what dictates when you do this)? _____

c) Where does it go immediately after you've collected it? _____

d) How do you store the manure that you collect from this barn?

(Skip if already answered above.)

TYPE OF STORAGE:

unlined clay lined lagoon solid manure pit concrete

D2. Freestall barn *Not Applicable*

a) How do you collect manure produced in your (see above)?

SAME AS FOR D1 _____

b) How often do you do this (and what dictates when you do this)? SAME AS FOR D1 _____

c) **Where does it go immediately after you've collected it?**

SAME AS FOR D1 _____

d) **How do you store the manure that you collect from this barn?**

(Skip if already answered above.)

SAME AS FOR D1 _____

TYPE OF STORAGE:

unlined clay lined lagoon solid manure pit concrete

D3. Milking Parlor/Facilities

Not Applicable

a) **How do you collect manure produced in your (see above)?**

SAME AS FOR D1/ D2 _____

b) **How often do you do this (and what dictates when you do)?**

SAME AS FOR D1/ D2 _____

c) **Where does it go immediately after you've collected it?**

SAME AS FOR D1/D2 _____

d) **How do you store the manure that you collect from this barn?**

(Skip if already answered above.)

SAME AS FOR D1/D2 _____

TYPE OF STORAGE:

unlined clay lined lagoon solid manure pit concrete

D4. Loose Housing or other major building *Not Applicable*
a) How do you collect manure produced in your (see above)?

SAME AS FOR D _____

b) How often do you do this (and what dictates when you do this)? SAME AS FOR D _____

c) Where does it go immediately after you've collected it? SAME AS FOR D _____

d) How do you store the manure that you collect from this barn?

SAME AS FOR D _____

TYPE OF STORAGE:

unlined clay lined lagoon solid manure pit concrete

D5. Where else do you collect manure from (INCLUDE OTHER LIVESTOCK)?

A	Barnyard			C	Bedding Pack		
B	Exercise area			D	OTHER#		

D6. How do you collect manure produced in your (see above)?

A	<input type="checkbox"/> SAME AS FOR D
B	<input type="checkbox"/> SAME AS FOR D
C	<input type="checkbox"/> SAME AS FOR D
D	<input type="checkbox"/> SAME AS FOR D

D7. How often do you do this (and what dictates when you do this)?

A	<input type="checkbox"/> SAME AS FOR D
B	<input type="checkbox"/> SAME AS FOR D
C	<input type="checkbox"/> SAME AS FOR D
D	<input type="checkbox"/> SAME AS FOR D

D8. Where does it go immediately after you've collected it?

A	<input type="checkbox"/> SAME AS FOR D
B	<input type="checkbox"/> SAME AS FOR D
C	<input type="checkbox"/> SAME AS FOR D
D	<input type="checkbox"/> SAME AS FOR D

D9. How do you store the manure that you collect from this barn?

A	<input type="checkbox"/> SAME AS FOR D
B	<input type="checkbox"/> SAME AS FOR D
C	<input type="checkbox"/> SAME AS FOR D
D	<input type="checkbox"/> SAME AS FOR D

D10. If you have a manure storage structure, could you tell us

- a) Surface dimensions _____
- b) Average depth _____
- c) Total capacity in _____ tons / gallons

AND/OR

_____ days/weeks/months

- d) How is it loaded?

top /surface

bottom of storage

D11. Have you ever received cost-sharing monies from a federal, state, or local government agency to help you build this manure-storage facility?

- NO
- YES
- NOT SURE

D12. Roughly how much of the manure that your whole herd produces in the spring, summer, fall, and winter in any given year do you collect? This includes lactating cows, dry cows, heifers, etc., and time spent indoors or time spent outdoors in exercise yards, pastures, etc.

Spring ()		Winter ()	
Summer ()		Fall ()	

We're now going to talk more about your hauling and spreading practices.

D13. Does all the manure produced by your herd stay on the farm?

- YES → skip to question **D14**
- NO → continue....

a) How much on average goes off the farm?

- 25% or less
- 26% - 50%
- 51% - 75%
- 75% or more

b) What arrangement do you have for its removal? _____

D14. Do you ever bring manure from other farms onto your farm operation?

NO → skip to question **D15**

YES → **a) What type of manure do you receive? _____**

b) How much do you receive? _____

c) When do you receive it? _____

d) Where do you spread it? _____

e) What arrangements have you made to receive it? _____

D15. How often and when do you usually haul/apply manure on your farm in the . . . ?

Spring	daily monthly	weekly never	Winter	daily monthly	weekly never
Summer	daily monthly	weekly never	Fall	daily monthly	weekly never

D16. What kinds of machinery are used to spread the manure to your farm fields (see if we can acquire make)? _____

D17. Who usually hauls manure onto your farm fields?

I do custom manure hauler Other _____

D18. On a scale of 1-5, with 5 being very important and 1 being not very important, could you rank the following factors as to how important they are in determining when and where you or your custom manure hauler spread your manure?

	Not			Very	
	Important			Important	
	1	2	3	4	5
a. Crop requirements	1	2	3	4	5
b Soil conditions	1	2	3	4	5
c Soil residual nutrient levels	1	2	3	4	5
d. How full your manure store is	1	2	3	4	5
e When the person who hauls the manure is available	1	2	3	4	5
f. The weather	1	2	3	4	5
g. The distance I have to haul the manure	1	2	3	4	5

D19. Are there any other factors that determine where and when you haul manure that we have not mentioned? _____

D20. Of the factors you've just mentioned which is probably the most important? _____

D21. In what kinds of fields do you usually spread manure during the following seasons, giving the most important field first, etc.?

a	Fall	<input type="checkbox"/> I don't <input type="checkbox"/> corn <input type="checkbox"/> other _____
b	Winter	<input type="checkbox"/> I don't <input type="checkbox"/> corn <input type="checkbox"/> other _____
c	Spring	<input type="checkbox"/> I don't <input type="checkbox"/> corn <input type="checkbox"/> other _____
d	Summer	<input type="checkbox"/> I don't <input type="checkbox"/> Hay (after 1 st cut) <input type="checkbox"/> other _____

D22. How much of the manure that you apply to your land would you say gets incorporated into the soil within 24 hours after spreading?

- All of it Over 75 % 50-75 %
 25-50 % 0-25 % none of it

D23. What factors affect your ability to incorporate manure into the soil? _____

D24. Since last year (a year ago), roughly how many TOTAL ACRES on your farm have received any manure? _____acres

OK, I'm going to ask a few questions about the nutrients that are in the manure and the nutrients that are commercial fertilizers.

D25. What do you think are the advantages or disadvantages of using manure compared to commercial fertilizers? _____

D26. Which of the following would describe your understanding of the fertilizer value of the manure you spread on your fields?

- Good understanding
- Some understanding
- I don't really think about it

D27. Do you think the nutrient content of manure is reliable enough to eliminate the need for commercial fertilizers?

- Yes No
- Yes for some nutrients (which)_____

At this point, have a very brief discussion with the farmer about the proposed manure spreading record keeping system/plans.

PART E: NUTRIENT MANAGEMENT PLANNING

At this point, we have a pretty good idea of your herd size and composition, your farm and field layout, cropping systems and practices, how you store feeds and feed your herd, and how you manage the manure your herd produces. The last part of today's survey will be on some general aspects of the overall nutrient management on your farm.

- E1. Do you have a written nutrient management plan for your farm operation?** *For these questions, a nutrient management plan is defined as: "any written plan that guides nutrient application on your fields." Note: a nutrient management plan is not the same as a conservation plan.*

Yes -----> **E5**

No --> *continue*

- E2. To what extent to you pay attention to the way nutrients are lost from your farm?**

<input type="checkbox"/>	Not at all	<input type="checkbox"/>	Slightly
<input type="checkbox"/>	Somewhat	<input type="checkbox"/>	Very much

- E3. What environmental issue do YOU currently think is of biggest concern to farmers?** _____

- E4. What environmental issue relating to farmers do you think is given too much coverage by the media / general public?** _____

NOW SKIP TO PART F

E5. How important is your nutrient management plan to the way you make decisions about your dairy and cropping operations?

<input type="checkbox"/>	Not at all	<input type="checkbox"/>	Slightly
<input type="checkbox"/>	Somewhat	<input type="checkbox"/>	Very much

E6. What do you think are the biggest advantages you can gain from nutrient management planning? _____

E7. What do are do the biggest disadvantages? _____

E8. What motivated you to write a nutrient management plan? _____

E9. Was this plan developed to help you qualify for a government program? (May have answered above.)

- Yes, a 590 nutrient management plan
- Yes, another type of plan _____
- No

E10. What percent of your cropland is covered by the nutrient management plan?

<input type="checkbox"/>	25% or less	<input type="checkbox"/>	26% - 50%
<input type="checkbox"/>	51% - 75%	<input type="checkbox"/>	76% or more

E11. Roughly what percent of the total manure that is hauled to your fields is covered by your nutrient management plan?

<input type="checkbox"/>	25% or less	<input type="checkbox"/>	26% - 50%
<input type="checkbox"/>	51% - 75%	<input type="checkbox"/>	76% or more

E12. What environmental issue do YOU currently think is of biggest concern to farmers? _____

E13. What environmental issue relating to farmers do you think is given too much coverage by the media/general public? _____

E19. What impact do you think your nutrient management plan has had on local water quality near your farm?

- It has had no impact on local water
- It has had a small, positive impact on local water
- It has had a major, positive impact on local water
- I don't know -- it has never been explained to me how this plan will influence local water

Could we see a copy of your nutrient management plan?

PART F: THE FARMER AND PLANS FOR THE FUTURE

- F1. How old are you? _____
- F2. How many years have you been operating this dairy farm? _____
- F3. Did you grow up on a dairy farm?
- NO
 - YES
- F4. Are you originally from this area?
- YES
 - NO → How long have you lived in this area? _____
- F5. How much of the work done on this farm is done by family members or other relatives?
- All work done by family
 - more than ½
 - less than ½
- F6. How much of your household income comes from non-farm sources (off-farm employment, pensions, investment income, etc.)?
- All from off-farm
 - more than ½
 - less than ½ from off-farm
- F7. How many cows do you expect to be milking on this farm in 5 years?
- None, we plan to quit dairying by the year _____ → *Skip to F8*
 - We expect to be milking _____ cows in 5 years

F8. How likely is it you will make each of the following kinds of changes to your dairy operation over the next 5 years? For the next 10 questions, please respond by saying 'very likely' to 'very unlikely.'

<i>TYPE OF CHANGE</i>	Very likely	Likely	Not sure	Unlikely	Very Unlikely
Buy more feed from off the farm					
Expand cropping operation					
Hire a nutritional consultant					
Develop/update nutrient mgt plan					
Change crop mix <i>(explain):</i>					
Change tillage practices <i>(explain):</i>					
Change fertilization practices <i>(explain):</i>					
Build manure storage facility					
Build a <u>new</u> freestall barn					
Build a <u>new</u> parlor milking facility					

F9. Are there any other major changes you plan to make in your dairy operation over the next 5 years that I did not already mention?

- NO
- YES → _____
- _____

TRANSITION TO THE BARN:

We would like to take samples of each of the components in your typical feed ration to determine the protein and phosphorus content. We will share the results of these analyses with you.

Finally, we would like to take manure samples from the herd to allow us to examine the relationship between nutrients in the diet and nutrients in the manure among typical dairy herds.