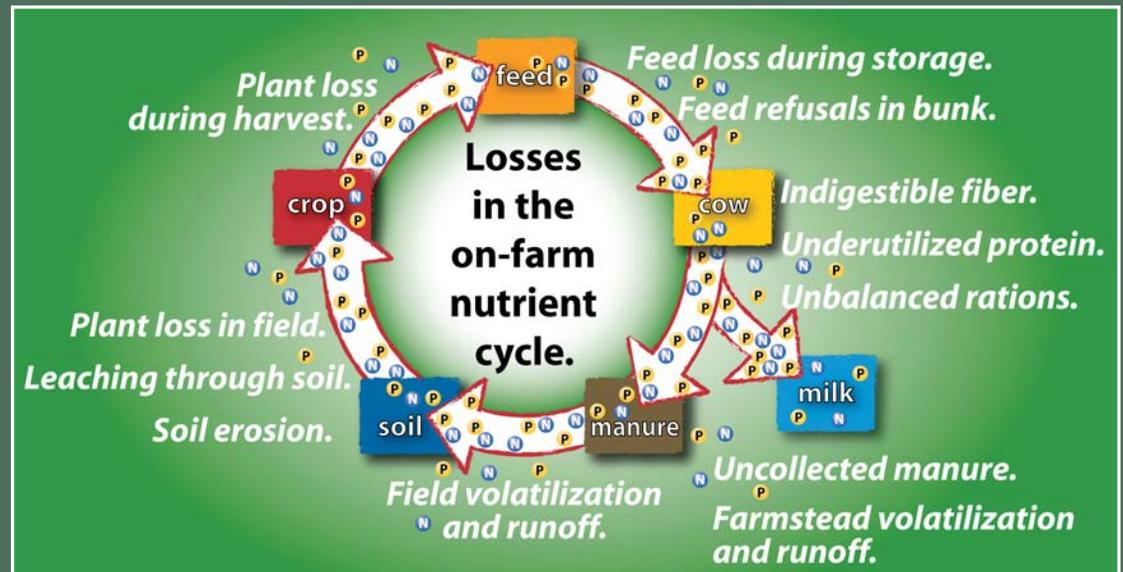


Mind your **P**s & **N**s for economic and environmental **SUSTAINABILITY!**

Nutrients, such as nitrogen and phosphorus, can be lost at many different times in the on-farm nutrient cycle.

Saving nutrients leads to improved **economic** sustainability for the dairy producer -- fewer purchases of protein supplement for the herd and fertilizer for the field.

Saving nutrients also leads to improved **environmental** sustainability -- fewer nutrients such as P & N finding their way into surface water, groundwater, and air.



Research to maximize **P** & **N** utilization (and minimize loss) is a major goal at the U.S. Dairy Forage Research Center



- | Nutrient Losses | Examples of USDFRC research |
|---|---|
| Feed loss during storage | <ul style="list-style-type: none"> Testing bunker cover materials, methods Measuring DM loss due to heating -- in large bales, both hay and baleage |
| Indigestible fiber | <ul style="list-style-type: none"> Selecting & modifying forage plants for increased NDFD Identifying & quantifying rumen microbes that digest feed |
| Underutilized protein | <ul style="list-style-type: none"> Seeking ways to reduce protein degradation of alfalfa -- in the rumen and during ensiling determining protective nature of tannins and PPO/o-diphenols |
| Unbalanced rations | <ul style="list-style-type: none"> On-farm, daily monitoring of forage moisture Fine-tuning protein requirements Developing new standardized starch analysis |
| Farmstead and field volatilization and runoff | <ul style="list-style-type: none"> Determining and measuring fate of ammonia Determining N&P losses in runoff from corn and alfalfa |
| Soil erosion from cropland | <ul style="list-style-type: none"> Intercropping of legumes and corn |

U.S. Dairy Forage Research Center
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Mind your **P**s and **N**s with the ... Snap-Spot Assessment of Nutrient Use Efficiency Measure and monitor ... feed, fertilizer, and manure use on dairy farms.

These materials and more are available on the USDFRC web site:
www.ars.usda.gov/mwa/madison/dfrc

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

Compiled by D.B. Jackson-Smith and J.M. Powell
 Published on-line June, 2009
 Adaptation for use by members is welcome.
 Please notify Mark Powell if you intend to use this document or if you would like an electronic file of this document.
mark.powell@ars.usda.gov

Fact sheet
 U.S. Dairy Forage Research Center
Snap-shot assessment of nutrient use efficiency on confinement dairy farms

Compiled by J.M. Powell, D.F. McCrory and H. Saem
 Published on-line June, 2009
 Adaptation for use by members is welcome.
 Please notify Mark Powell if you intend to use this document or if you would like an electronic file of this document.
mark.powell@ars.usda.gov

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

Compiled by J.M. Powell, D.F. McCrory and H. Saem
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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 title of person who was additional info if person who was:
 Primary farm operator
 Junior farm operator (own, do)
 Head manager
 Head farm hand
 Spouse of one above (specify): _____
 Other (comments): _____

G. Where any other decision makers:
 head decision maker
 crop decision maker
 Other (comments): _____

H. Time: started: _____ finish: _____
 I. Comments on how interview went: _____

b) What kind of fields/yard are they going to?
 grass alf concrete other _____

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

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

2. Loads - How much you spread?
 A load of manure is what you consider to be a full set level of spread (such as in a row area a single) that is spread in rows on which one cow can be fed. For wet manure, use two applications, give them a coat for 2 weeks.

You can use whatever units you want, but we'll suggest spreads: 1/2 the acre, and 1/3 the acre. If you have manure, use two applications, give them a coat for 2 weeks.

3. Type - what sort of manure it is?
 This is for you to describe the main type of manure it is in a field that you are spreading. It is important that the manure you're spreading is slightly different (or use from barnyard) spreading in a feeding (and etc.).

Again, we've suggested a section where you can report manure. For example, you could write on for us for barnyard (B1, etc.).

Example manure sheet

Day	Field ID	Load	Type
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

4. Comments - How much you spread you use
 This section is for you to write down all the things that you do. Just think about the main reason you are to and write it down.

This is a plus section and there is no right or wrong way to do it. You may want to make a note of things - such as the weather, the condition of the soil, how busy you were when spreading, etc. - but it is really up to you what to write down.