



Manure Sharing & Selling: *What is Manure Worth?*

Scott Day

Manitoba Agriculture & Food

**Manitoba
Agriculture
and Food**













Advantages to Manure Purchasers\Users

- ✘ Often getting a lot more than what you pay for**
- ✘ Save wear and tear on your equipment**
- ✘ Timed release fertilizer, less likely to leach**
- ✘ Additional organic matter (good for the soil)**
- ✘ Maybe disease reduction(?)**



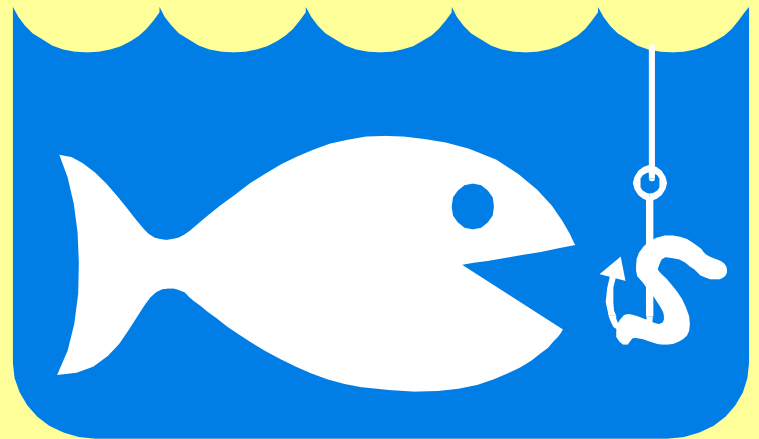
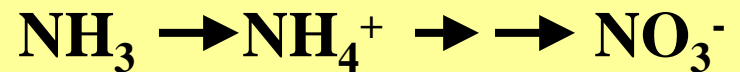
Disadvantages to manure purchasers\users

- ✘ Often getting a lot more than what you pay for (excessive nutrients, salts) - need regular testing. Norwest has shown a 10 fold difference between the low and high.**
- ✘ Application may not fit the farming system - tillage, timing, etc.**
- ✘ Ron Tone's work done in 1997 - 123 lbs. N manure was not equivalent to 100 lbs manure of anhydrous.**
 - ✘ Stripping (28 inches)**
 - ✘ Compaction**



How Manure is *Similar to* Commercial Fertilizer:

- ✗ Inorganic N is in the ammonia (NH_3) or ammonium (NH_4^+) forms.
- ✗ Converted in the soil to nitrate (NO_3^-) - readily available to plants.



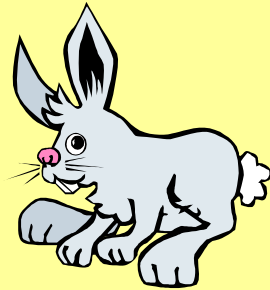
“plant uptake”





How Manure is *Different from* Commercial Fertilizer

- ✗ Commercial N fertilizer = all inorganic N
- ✗ Manure N = inorganic + organic N



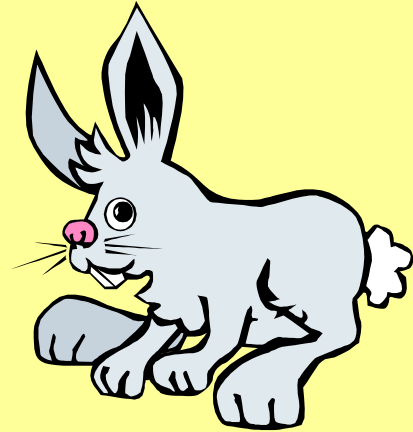
- ✗ Organic N must be mineralized before it is available to plants





How Liquid and Solid Manures are *Different from Each Other*

- ✗ Most liquid manures:
 - ✗ 70-80% of total N is inorganic N
 - ✗ High N:P ratio
 - ✗ immediate crop response to N
 - ✗ add starter fertilizer for P





How Liquid and Solid Manures are *Different from Each Other*

✘ Most solid manures:

✘ 70% or more of total N is organic N

✘ low N:P ratio

✘ slow crop response to manure N

✘ fertilize for P and add supplemental N

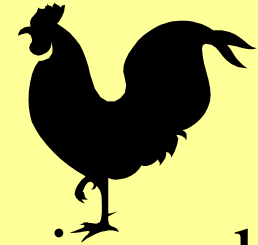
✘ watch for gradual nutrient contributions over time (soil test)

✘ exception: solid poultry manures





Solid Poultry Manures



- ✘ Considerable amounts of both inorganic and organic N
- ✘ more available N than other solid manures
- ✘ low N:P ratio
- ✘ check which nutrient is limiting, fertilize with manure and supplement with commercial fertilizer



Interpreting a Manure Analysis

- ✘ Imperial or metric units (lb/1000 gal = kg/1000 L × 10)
- ✘ If solid manure, are nutrients reported on wet (as is) basis or dry weight basis?
- ✘ Convert nutrients to their commercial fertilizer forms (P, K)
- ✘ Availability of nutrients: NH_3 , organic N, P_2O_5 , K_2O , S, other nutrients



\$ Value of Manure

Information Needed	Example
<i>Available</i> nutrient content of manure (lb/1000 gal)	20
Fertilizer \$ value of nutrient (\$/lb)	\$0.22
Nutrient value of manure (\$/1000 gal)	\$4.40
Total nutrient value of manure (\$/1000 gal)	Add \$ values of N, P ₂ O ₅ , K ₂ O, etc.
Application cost (\$/1000 gal)	\$8.00



What Is Manure Worth?

**A lot more than most are paying
and others are charging.**



**So what should a grain producer
be willing to pay for manure and
a livestock producer be willing
to sell it for?**

✘ Answer: Whatever the market will bear!



But, that is a cop-out.

So here is what you should be willing to pay:

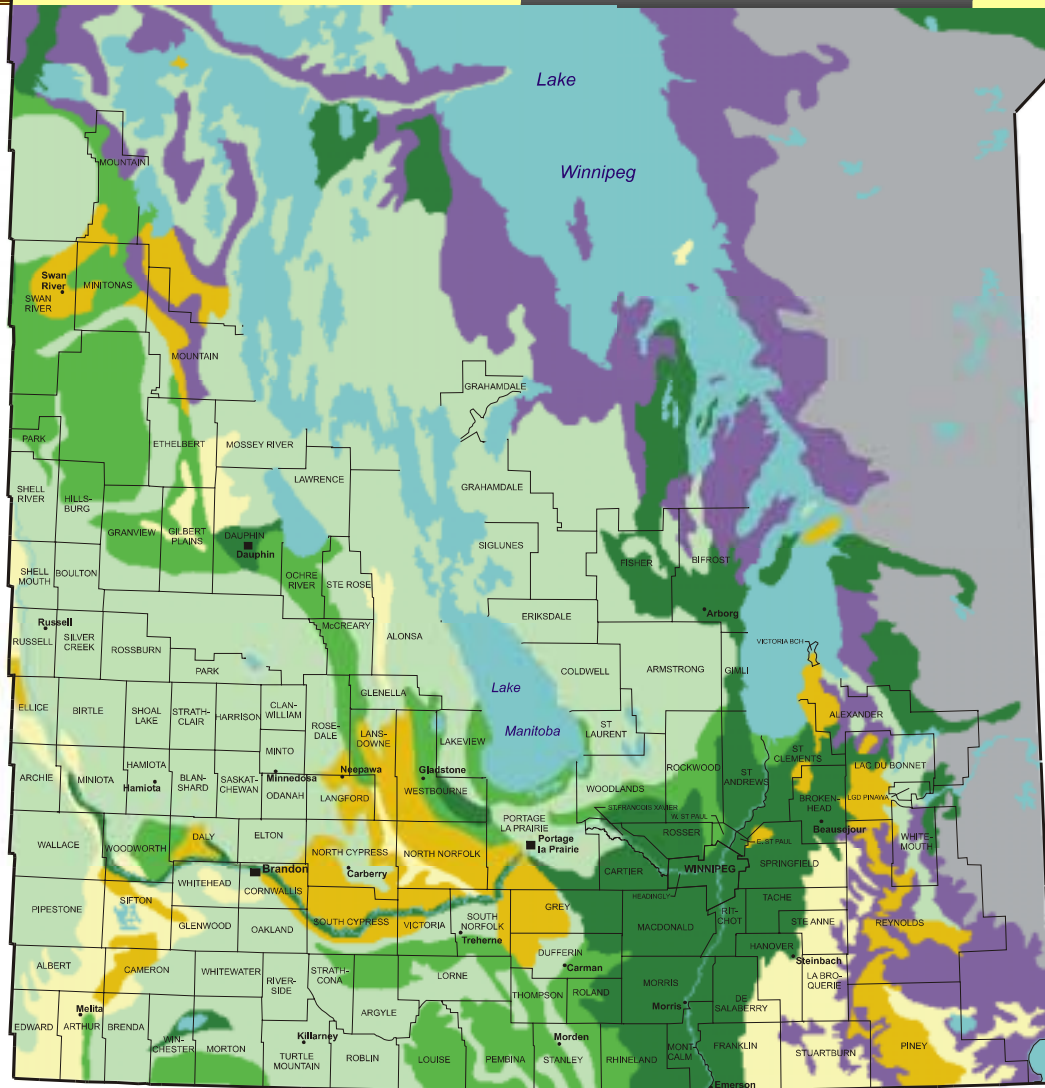
- ✘ Full equivalent value to commercial fertilizer plus what would be normally charged to custom apply fertilizer (\$5.00 - \$8.00\acre) in the area**
- ✘ Then you work back from there -**
 - are nutrients in balance and when are they available?**
 - is application timing poor?**
 - is compaction, tillage a concern?**



What will you sell it for?

- ✗ Full equivalent commercial value of nutrients (they are nutrients you have paid for); then work back from there.**
- ✗ Location! Application costs!**
- ✗ Timing**
- ✗ Potential for long term relationship - start low, move up**
- ✗ Value will bring self-regulation?**

Generalized Surface Texture Map of Southern Manitoba



GROUP TEXTURE CLASS

Coarse

gravelly sand
fine sand
sand
loamy sand
loamy fine sand

Moderately Coarse

sandy loam
fine sandy loam

Medium

very fine sandy loam
loam
silt loam

Moderately Fine

clay loam

Fine

clay

organic

bedrock outcrop

water

(based on the dominant soil component
of each polygon)

Soil Resource Section
Soils and Crops Branch
April, 1998

Manitoba
Agriculture
and Food





Kevin Erb - U. of Wisconsin - kevin.erb@CES.WWEK.edu.

- × Manure listing**
- × Forms - give them the tools**
- × Manure sharing - your quarter up there, their's down here**
- × Their cut-off is 1000 animal units. However, if you get government financial assistance , then, for the next 10 years, you have to submit a N based manure plan.**
- × Manure agronomists are hired to do these manure management plans but often find a home as well - “Manure Brokers”**
- × Fee is around \$5\1000 gallons - application costs - many split this fee**
- × August 22nd Manure Expo**



Manure Spreading Agreements

- ✘ written agreement**
- ✘ state duration of agreement**
- ✘ identify lands as potential fields to receive manure**
- ✘ responsibilities of landowner/renter**
- ✘ responsibilities of the livestock operator**
- ✘ identifies manure applicator**



**Texas - Jerry Lemunyon - USDA- Dallas, Fort Worth
lemunyon@flash.net.**

- ✘ Many counties are “full” - impaired counties based on P in watershed, not concentrating on N**
- ✘ Many of the large dairies supply all their P through wash water. Solids hauled away free by Dept. of Transport - dairy farmers get nothing.**
- ✘ Dairy Dry Matter \$10 - \$20\ton in places where dairy is not concentrated.**
- ✘ Composting difficult - often need to add shaving, leaves, grass, etc.**
- ✘ Feedlots out West - often in relationship with feed supplier. Their manure gets mixed with rocks, dirt. They can get: \$10 - \$20\ ton for beef ave. 8-4-8. \$25\ton for dairy ave. 12-6-8. Poultry \$30\ton for poultry ave. 40-40-30. Hogs no selling, planning on it all evaporating away - not working as you go North**





Alberta

- ✘ Feedlot Alley**
- ✘ 12 feedlots composting for the “REAL THING”**
- ✘ mostly land use agreements**
- ✘ 2 hog operations as well - adding Carbon**
- ✘ Potatoes and root crops really seem to benefit**
- ✘ Custom composters**





Compost

- ✘ Not that easy to do - make sure you have a market**
- ✘ CFIA regulations**
- ✘ Poultry producers near Fredericton, NB**
 - compost tea**
 - has never got to the bagging stage**
 - part of a package**
- ✘ C:N ratios - @ 30**
- ✘ Moisture at 60%**
- ✘ 65 degrees C. max. temp**
- ✘ Disease prevention?**







Ontario

- ✘ As many agreements as farmers**
- ✘ Niagara manure to tobacco country - strictly for organic matter**
- ✘ Composting - once again expensive Carbon source**
- ✘ Signed agreements needed for manure plans**



Saskatchewan-Manitoba

- ✘ Saskatchewan:
- ✘ Stomp Pork Farms - \$25\acre application fee
- ✘ Big Sky, Heartland - \$15\acre (3 years ago nobody paid)
- ✘ Quadra - bid process - \$5 - \$21\acre 2 mile radius
Aer-Way unit - Bourgault? Average application 7000 gallons\acre
- ✘ Manitoba: Many techniques already mentioned
- ✘ Elite - 60% of the Fall price of NH₃ based on the amount available at application. Offset for inexperience and a land caveat
- ✘ Some pay application fuel costs







Manure Management: Utilization or Disposal?

- ✗ Apply when needed
- ✗ apply where needed
- ✗ inject, minimize losses
- ✗ apply to crops that need N
- ✗ apply to productive lands
- ✗ manure tested often
- ✗ Winter applications
- ✗ apply to closest fields
- ✗ counting on volatiliz'n
- ✗ depend on alfalfa to use up excess N
- ✗ apply to marginal lands b/c available
- ✗ no manure test



Manure Management: Utilization or Disposal?

- ✗ Apply manure N according to soil test
- ✗ target yields supported by data
- ✗ try to make manure “go farther”
- ✗ expand land base via purchases, lease agreements
- ✗ Apply higher rates of N than needed
- ✗ unrealistically high target yields
- ✗ apply as quickly and cheaply as possible
- ✗ absorb manure on existing land base



Future

- ✘ Lobsters?
- ✘ More Homogeneous product - complete package
- ✘ In crop application - more applications throughout the season
- ✘ As technology improves, manure values will equal “commercial values”
- ✘ Manure test + Soil test = Full nutrient services
- ✘ Value = Independence



Scott Day:

Phone: **204 534 2461** or

email: sday@gov.mb.ca

