

A group of people in brown suits and white shirts are walking on a set of concrete stairs. Some of the people are carrying briefcases. On the stairs, there are several clumps of brown manure. The text is overlaid on the image in a yellow, bold, sans-serif font.

Managing Manure to Prevent Nitrogen Loss and Maximize Plant Nitrogen Availability

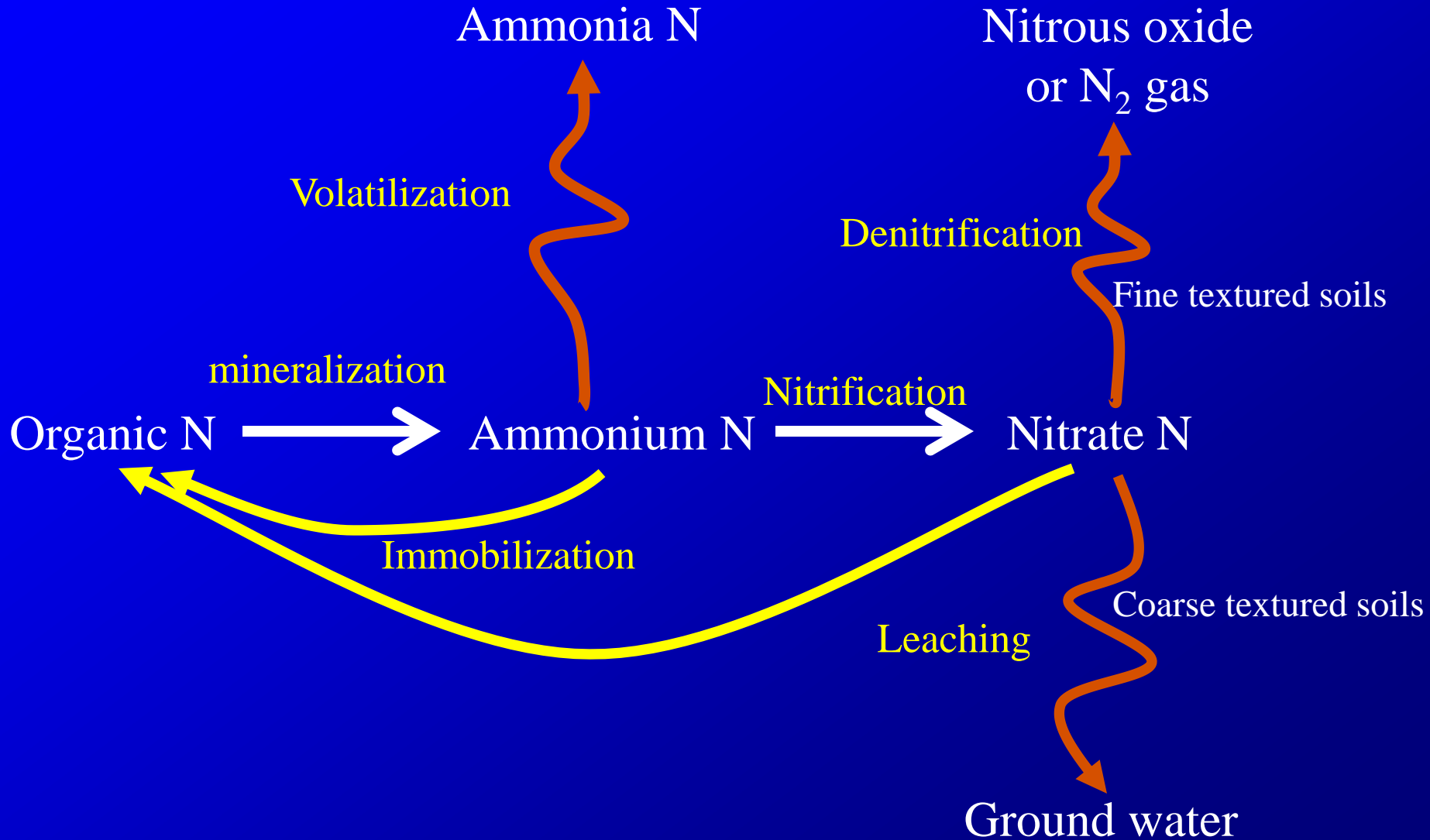
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John Lauzon

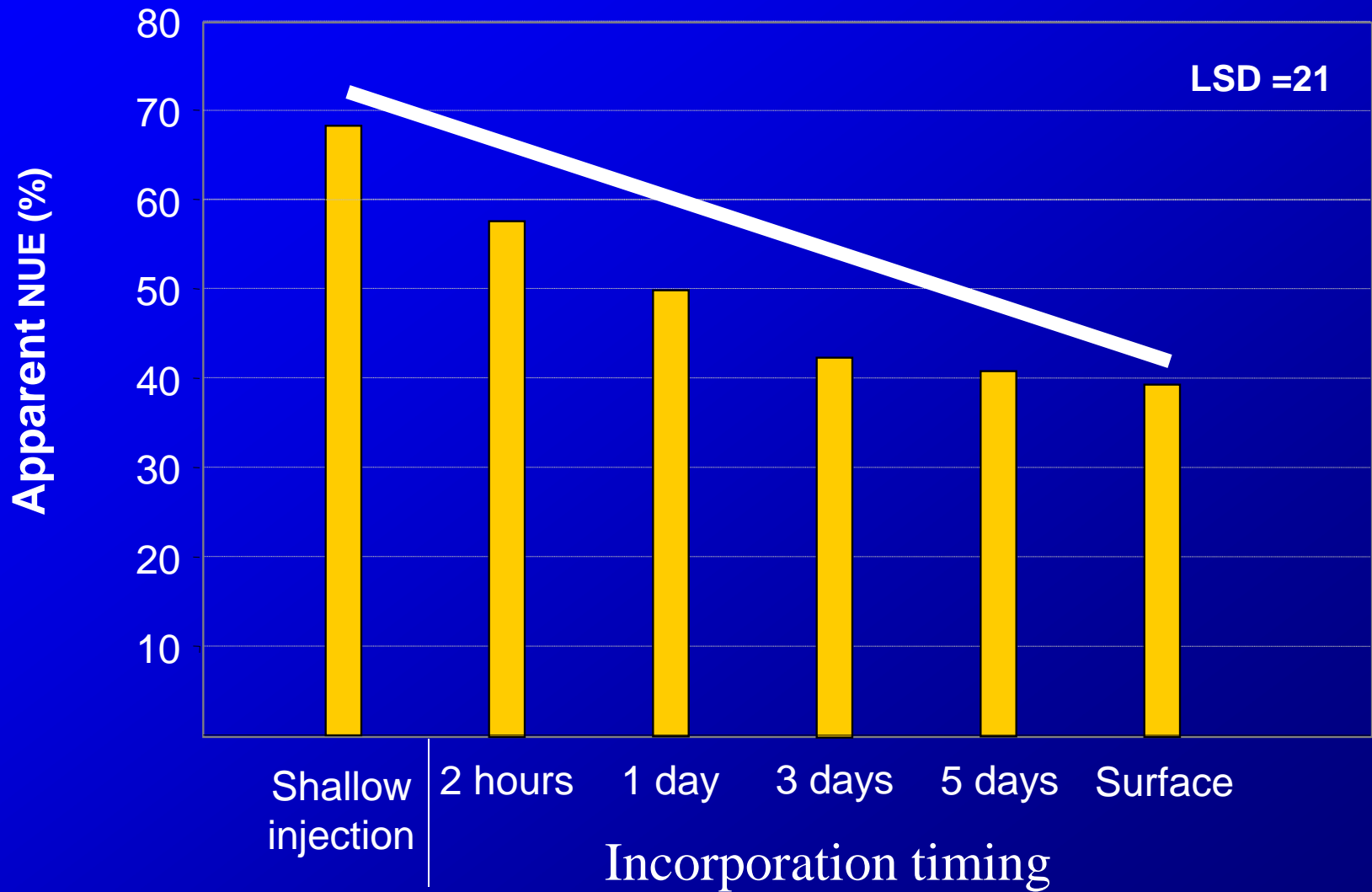
1994 Nutrients in Ontario

Source	N	P ₂ O ₅ (tonnes)	K ₂ O
Manure ¶	140 000	72 000	150 000
Fertilizer ¶¶	168 000	88 000	144 000
.....			
Nurient Value (\$)	99 000 000	52 000 000	53 000 000
2008 Value	220 000 000	198 000 000	155 000 000

Manure Nitrogen



Apparent Nutrient use Efficiency from Spring applied Liquid Hog Manure



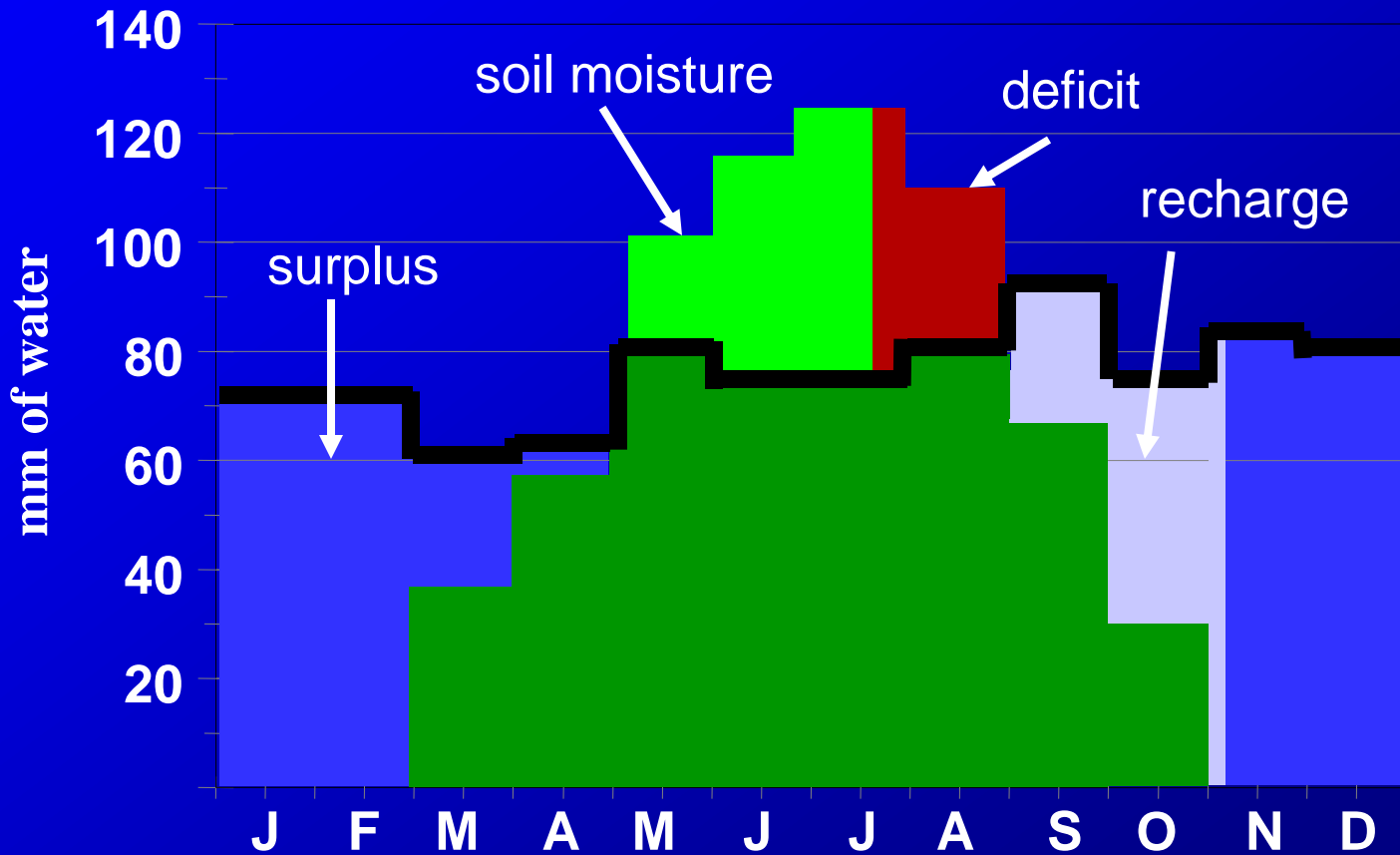
Potential Ammonia Losses in the Field

	Cool wet	Cool Dry	Warm Wet	Warm Dry
Time to incorporation	Estimated loss (% of ammonium-N)			
1 Day	10	15	25	50
3 Days	15	22	38	65
5 Days	20	30	50	80
Not incorporated	40	50	75	100
Early fall not incorporated	40	50	75	100
Late fall not incorporated	25	25	n/a	n/a
Injected (well covered)	0		0	0

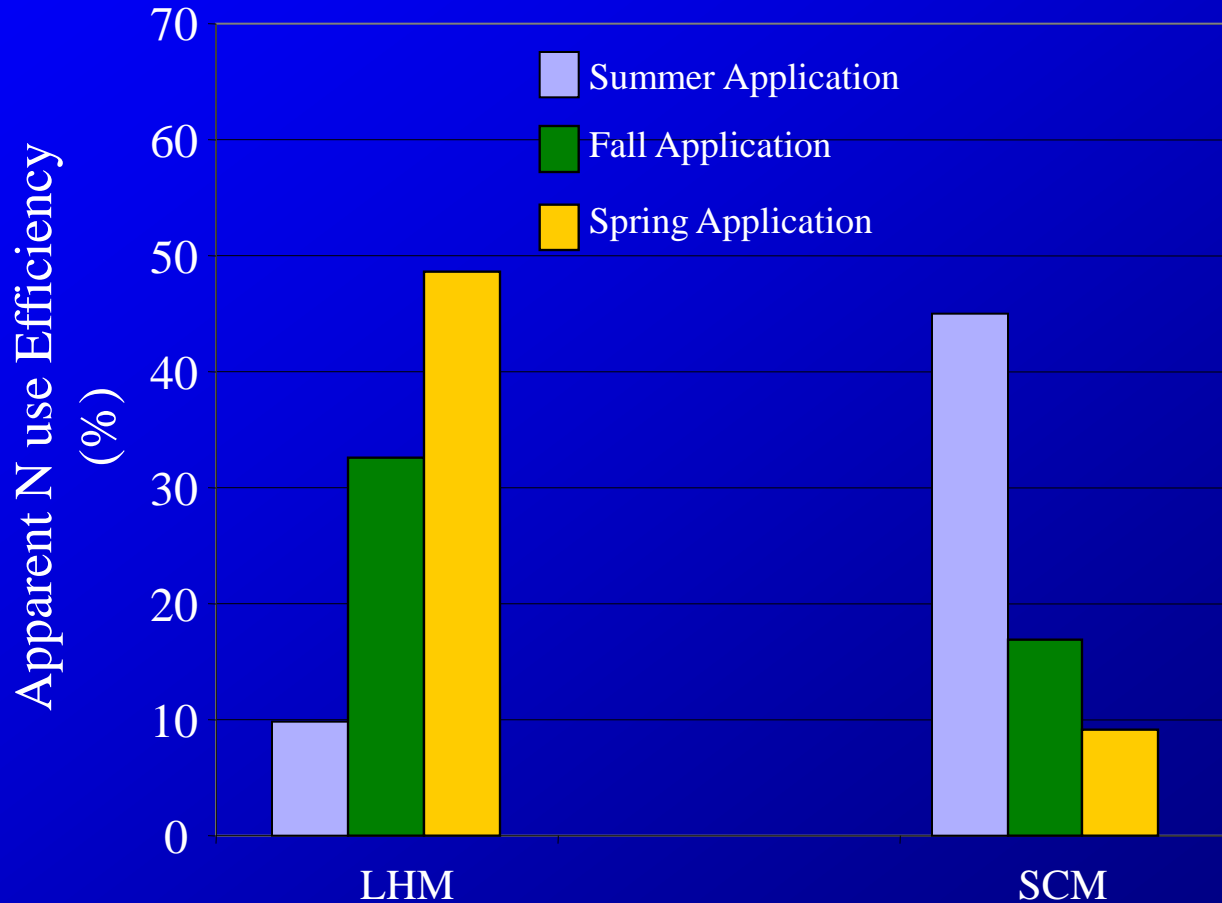
Ammonium Levels of Different Manures

Manure Type	Ammonium Nitrogen (%)
Liquid Poultry	70
Liquid Hog	66
Liquid Beef/Dairy	55
Solid Hog	30
Solid Poultry	30
Solid Dairy	25
Solid Beef	12

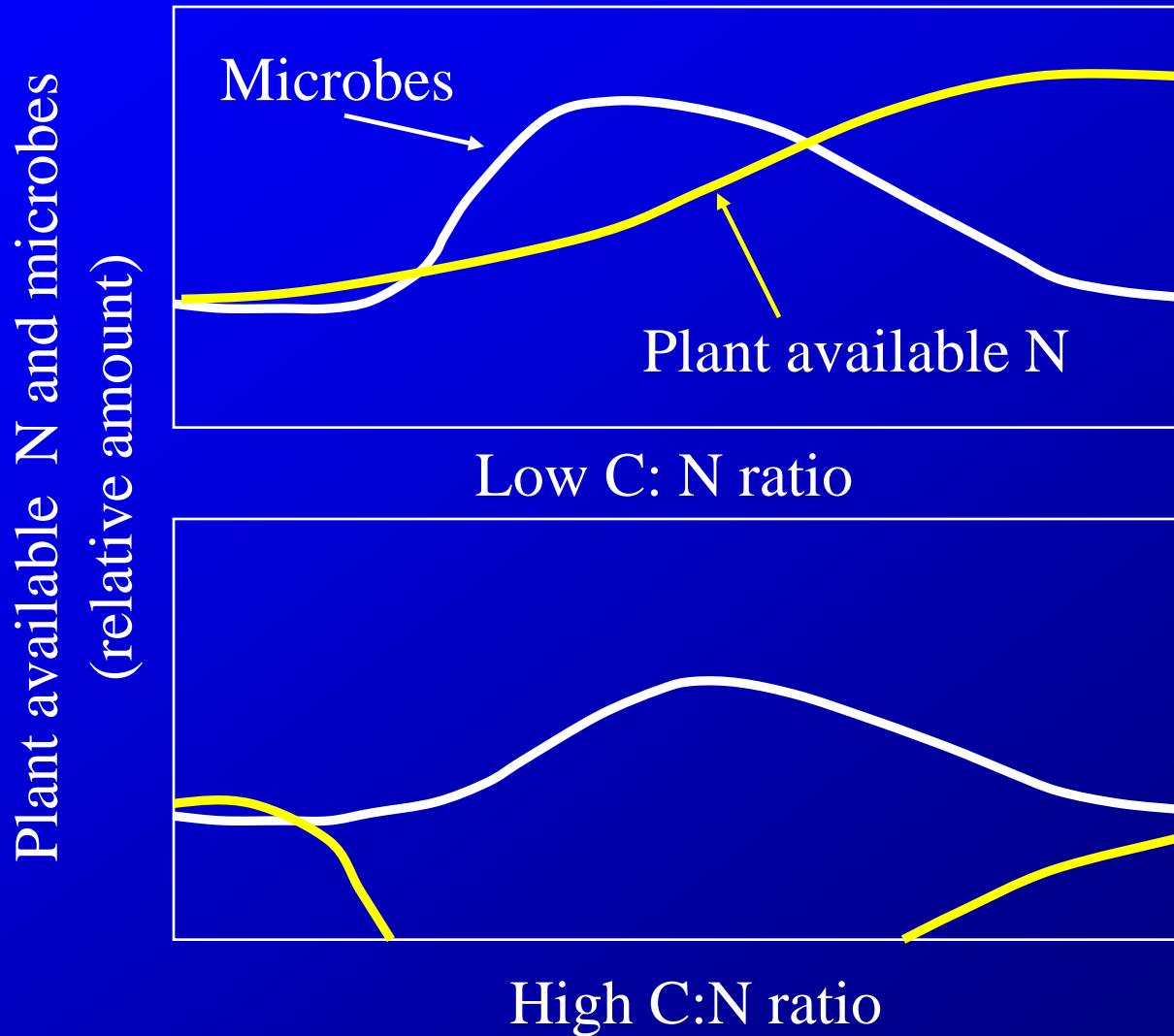
Typical Water Budget for Sault Ste. Marie



Timing of Application and Type of Manure ANUE



Mineralization - Immobilization



Summary

- Best management of manure is dependant on the type of manure being managed, the soils used, the crops grown, and the climate of the area it is being managed in
- Manures high in mineral nitrogen (ammonium) should be applied in spring to maximize crop nitrogen availability
- Manures high in organic matter may be better applied in the fall to maximize crop nitrogen availability in the following year
- All manures should be incorporated in the soil as quickly as possible to avoid ammonia loss



Ship High In Transit