Worksheet I - "How Far Can You Afford to Haul Manure?"

1. Calculate the nutrient content and value per unit of your manure.

A "unit" is either a 1000 gallons (liquid/slurry) or a ton (solid/semi-solid).

From Manure Analysis	Manure Type:		Availability Factor*		Available Nutrients (lbs/unit)		Fertilizer Equivilant Value** ($/lb)		Value Per Unit ($/unit)
	(lbs/unit)	x		=		x		=	
Ammonia-N		x		=		x		=	
Organic-N		x		=		x		=	
P_2O_5		x	1.00	=		x		=	
K_2O		x	1.00	=		x		=	
							Total Value ($/unit)		

*Refer to Tables on back to determine N availability

**See Worksheet II on back

EXAMPLE

From Manure Analysis	Manure Type:		Availability Factor		Available Nutrients (lbs/unit)		Fertilizer Equivilant Value ($/lb)		Value Per Unit ($/unit)
	Liquid								
	(lbs/unit)	x		=		x		=	
Ammonia-N	*12.0*	x	*0.70*	=	*8.4*	x	*$0.65*	=	*5.46*
Organic-N	*13.0*	x	*0.36*	=	*4.7*	x	*$0.65*	=	*3.04*
P_2O_5	*8.0*	x	1.00	=	*8.0*	x	*$0.62*	=	*4.96*
K_2O	*20.0*	x	1.00	=	*20.0*	x	*$0.50*	=	*10.00*
							Total Value ($/unit)		*$23.46*

2. Calculate the cost per mile per unit to haul your manure.

This cost is per one-way mile to haul the manure but does account for the return trip.

Spreading Cost ($/hr)		Average Speed* (mph)		$/mile		Load Capacity (units)		Hauling Cost ($/mile/unit)
	÷		=		÷		x 2 =	

* Average speed of loaded to field and unloaded for return trip.

EXAMPLE

Spreading Cost ($/hr)		Average Speed* (mph)		$/mile		Load Capacity (units)		Hauling Cost ($/mile/unit)
$110.00	÷	*15*	=	*$7.33*	÷	*5.2*	x 2 =	*$2.82*

3. Calculate breakeven distance. (How far you can travel one-way and breakeven on costs.)

Total Value ($/unit)		Hauling Cost ($/mile/unit)		Breakeven Distance (miles)
	÷		=	

EXAMPLE

Total Value ($/unit)		Hauling Cost ($/mile/unit)		Breakeven Distance (miles)
$23.46	÷	*$2.82*	=	*8.3*

4. Calculate breakeven travel time. (How long can you travel one-way and breakeven on costs.)

Breakeven Distance (miles)		Average Speed (mph)		Breakeven Travel Time (minutes)
	÷		x 60 =	

EXAMPLE

Breakeven Distance (miles)		Average Speed (mph)		Breakeven Travel Time (minutes)
8.3	÷	*15*	x 60 =	*33*

Worksheet II - Calculating Fertilizer Nutrient Value

1. Calculate the value of nitrogen (N) per pound using urea

Urea analysis: 46-0-0 (920 lbs N per ton)

Fertilizer Cost ($/ton)		lbs N per ton		N Value ($/lb)
	÷	920	=	

EXAMPLE

Fertilizer Cost ($/ton)		lbs N per ton		N Value ($/lb)
$600	÷	920	=	*$0.65*

2. Calculate the value of phosphate (P_2O_5) per pound using MAP

MAP analysis: 12-52-0 (240 lbs N and 1040 lbs of P_2O_5 per ton)

Fertilizer Cost ($/ton)		lbs N per ton		N Value (Step 1.) ($/lb)		Value of P2O5 per ton		lbs P_2O_5 per ton		P_2O_5 Value ($/lb)
	- (	240	x		) =		÷	1040	=	

EXAMPLE

Fertilizer Cost ($/ton)		lbs N per ton		N Value (Step 1.) ($/lb)		Value of P2O5 per ton		lbs P2O5 per ton		P2O5 Value ($/lb)
$800	- (	240	x	*$0.65*	) =	*$643*	÷	1040	=	*$0.62*

3. Calculate the value of potash (K2O) per pound using muriate of potash

Muriate of Potash analysis: 0-0-60 (1200 lbs K2O per ton)

Fertilizer Cost ($/ton)		lbs K2O per ton		K2O Value ($/lb)
	÷	1200	=	

EXAMPLE

Fertilizer Cost ($/ton)		lbs K2O per ton		K2O Value ($/lb)
$600	÷	1200	=	*$0.50*

Organic-N Availability*

Percent Dry Matter of Manure	Soil Drainage Class (In First Year)	Availability Factor
< 20%	Well Drained - tilled in	0.36
< 20%	Poorly drain - tilled in	0.24
< 20%	Well Dr. - surface appl	0.24
< 20%	Prly. Dr. - surface appl	0.16
> 20%	Well Drained - tilled in	0.30
> 20%	Poorly drain - tilled in	0.20
> 20%	Well Dr. - surface appl	0.20
> 20%	Prly. Dr. - surface appl	0.14

* Source: Nutrient Recommendations for Field Crops in Vermont (W. Jokela), Un. of Vermont

Ammonia-N (NH4-N) Availability*

Season of Spreading	Days From Spreading To Incorporation	Availability Factor
Spring	< 1 hr	0.80
Spring	1 to 8 hrs.	0.70
Spring	1 day	0.55
Spring	2 days	0.50
Spring	3 to 4 days	0.45
Spring	> 4 days	0.40
Spring	Unincorporated	0.40
Fall	Within 2 days	0.30
Fall	Unincorporated	0.15

Prepared by Sid Bosworth, UVM-Extension, 2/96 (revised 2/08)