Linear Approach Nutrient Budget Worksheet

a. Enter the field identification number used on the photos/maps above, the year in which the crop will be grown, the crop that will be grown and the number of acres for that field.
b. Enter the expected crop yield from the Fertilizer Guidelines for Montana Crops MSU EB 161 based on expected nitrogen supplied from all sources.
c. Enter the results of the phosphorus field-specific assessment.
d. Enter Method of land application.
e. Enter when application will occur.

Line 1: Enter in the planned crop nutrient needs in pounds per acre from MSU EB 161

Line 2: Enter the credits from previous legume crop pounds per acre

Credits given in 17.30.1334(3)(c)(i): The nitrogen needs must be reduced based on nitrogen fixation credits if a legume crop was grown in the field in the previous year. Nitrogen reduction for annual legume crops is ten pounds per acre and for perennial legumes is 50 pounds per acre, unless appropriate justification is given showing a lower rate is appropriate, but not less than 35 pounds per acre for all perennial legumes except black medic and annual sweet clover, for which the rate is not less than 15 pounds per acre, and lentils and chick peas, for which the rate is not less than 30 pounds per acre.

Line 3: Enter nutrient credits from second year manure applications pounds per acre if no new soil test

Credits given in 17.30.1334(3)(c)(ii): Schedule I. Nitrogen Mineralization Rates

Type of Wastes	First Year[1]	Second Year
Fresh poultry manure	0.90	0.02
Fresh swine manure	0.75	0.04
Fresh cattle manure	0.70	0.04
Fresh sheep and horse manure	0.60	0.06
Liquid manure, covered tank	0.65	0.05
Liquid manure, storage pond	0.65	0.05
Solid manure, stack	0.60	0.06
Solid manure, open pit	0.55	0.05
Manure pack, roofed	0.50	0.05
Manure pack, open feedlot	0.45	0.05
Storage pond effluent	0.40	0.06
Oxidation ditch effluent	0.40	0.06
Aerobic lagoon effluent	0.40	0.06
Anaerobic lagoon effluent	0.30	0.06

[1] If irrigated, reduce first year mineralization by 0.05.

Line 4: Enter amount of nutrients from commercial fertilizer in pounds per acre. This can be starter or other fertilizer that is applied prior to manure application

Line 5: Enter nutrients supplied by any irrigation water in pounds per acre

Line 6: Subtract lines 2 through 5 from line 1 and enter in the space provided

Line 7: Enter in the nitrogen or phosphorus from sample taken of manure or process waster water within the last year

Line 8: Enter in the Nutrient Availability Factor. Enter 1 for phosphorus

Credits given in 17.30.1334(3)(c)(ii): Schedule II. Nitrogen Availability and Loss by Method of Application

Application Method	Loss Factor
Injection (sweep)	0.90
Injection (knife)	0.95
Broadcast (incorporated within 12 hours)	0.7
Broadcast (incorporated after 12 hours but before four days)	0.6
Broadcast (incorporated after four days)	0.5
Sprinkling	0.75

Line 9: Multiply line 7 by line 8

Line 10: Enter line 6

Line 11: Enter line 9

Line 12: Divide line 10 by line 11

Field identification: np2		Year: 2019	Crop:Barley		
Expected Crop Yield:60					
Phosphorus index results or Phosphorus application from soil test:30 ppm					
Method of Land Application:spreader					
When will application occur:spring					
Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	100 lbs	15 lbs	soil sample
2	(-)	Credits from previous legume crops, or soil test lbs/ac	0	0	soil sample
3	(-)	Residuals from past manure production lbs/acre (if no new soil test)	0	0	field history
4	(-)	Nutrients from commercial fertilizer and biosolids, lbs/acre	0	0	soil sample
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0	0	n/a
6		**= Additional Nutrients Needed, lbs/acre**	0.00	0.00	
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	1lb/1000gal	.08lb/1000gal	manure sample
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	1	1	manure sample
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	0.00	0.00	
10		Additional Nutrients needed, lbs/acre (calculated above)	0.00	0.00	
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	0.00	0.00	
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**			

Comments