

Field Assessment for Determining Priority of Manure Application

Based on soil test and state specifications, fields are required to be ranked for receiving manure.

Introduction:

Spreading livestock and poultry manure on crop and pastureland is an increasingly popular and recommended way to provide plant nutrients or to fertilize fields. This reduces the need to purchase feed and inorganic fertilizer. Managing manure to optimize its economic returns and at the same time minimize its potential environmental impact is critical.

In the past, manure spreading strategies have often been based on convenience. Usually those fields that are closest to the barn receive most manure. This strategy does not account for the economic value of nutrients in the manure and fails to protect the environment, especially air and water quality.

Every farm is unique with respect to site conditions, cropping patterns, and number and type of livestock. However, there are basic criteria that can be used for developing a manure application strategy. Based on soil and manure analysis, cropping system, and site limitations, fields can be ranked from highest to lowest priority for receiving manure.

What follows is a simple and flexible ranking method which farmers can use to quickly determine which fields should have priority for receiving manure. Fields with the highest accumulated points should be considered priority fields for manure application.

Category	Points*	Field #		
		1	2	3

1. Planned Crop (select one only)

- | | |
|--|----|
| a. Continuous corn or corn not following legume: | |
| yield goal > 25 ton/acre | 10 |
| yield goal 20-24 ton/acre | 9 |
| yield goal <20 ton/acre | 8 |
| b. Second-year corn following legume | 8 |
| c. First-year corn following legume | 1 |
| d. First-year corn following non legume | 10 |
| e. Non-forage legume | 2 |
| f. Small grains | 6 |
| g. Prior to direct seeding legume forage | 7 |
| h. Top dress (good legume stand) | 1 |
| i. Top dress (fair legume stand) | 2 |
| j. Top dress (poor legume stand) | 3 |
| k. Hay grass | 6 |

2. Phosphorous and Potassium soil test level (select one for each category)

- | | |
|-----------------------------|----|
| A: Phosphorous (ppm) | |
| a. < 5 (Very low) | 15 |
| b. 6-10 (Low) | 12 |
| c. 11-15 (Medium) | 10 |
| d. 16-20 (Optimum) | 6 |

Prioritization of fields for manure application saves money and protects the environment.

- e. 21-25 (High) 4
- f. 26-30 (Very high) 1
- g. >30 (Excessive) 0

B: Potassium (ppm)

- a. <70 (Low) 10
- b. 71-120 (Medium) 8
- c. 121-240 (High) 4
- d. >240 (Very high) 0

3. Site / Soil conditions
(select one for each category)

A: Proximity to surface water or ground water

- a. Manure applied and incorporated within frequently flooded plain or within <150 ft of surface water or ground water access 1
- b. Manure applied and incorporated within frequently flooded plain or within 150-300 ft of surface water or ground water access 3
- c. Application outside these restrictions 5

B: Slope (%)

(Do not apply in winter (Dec–Feb) if slope > 2 %)

- a. <2 10
- b. <6 (incorporated, contoured, or terraced) 8
- c. <6 (no runoff reduction practices) 6
- d. <12 (with runoff reduction practices) 4
- e. <12 (no runoff reduction practices) 2
- f. >12 1

C: Soil texture

- a. Sands, sandy loams, loamy sands (fall app.) 1
- b. Sands, sandy loams, loamy sands (spr. app.) 3
- c. Other soils 5

D: Depth to bedrock (inches)

- a. 0-10 0
- b. 10-20 1
- c. > 20 5

E: Years since manure applied

- a. > 5 years 10
- b. 2-5 years 5
- c. applied manure last year 0

F: Distance to storage

- a. <2 miles 10
- b. 2-6 miles 5
- c. 6-10 miles 0
- d. >10 miles -10

G: Odor and neighbor concerns

-20

4. TOTAL POINTS

For more information visit www.umass.edu/cdl

Factsheets in this series were prepared by Stephen Herbert, Masoud Hashemi, Carrie Chickering-Sears, and Sarah Weis in collaboration with Ken Miller, Jacqui Carlevalle, Katie Campbell-Nelson, and Zack Zenk.

This publication has been funded in part by Mass. Dept. of Agricultural Resources in a grant to the Massachusetts Farm Bureau Federation, Inc. and by Mass. Dept. of Environmental Protection, s319 Program.