**Section 502.625 Determination of Livestock Waste Application Rates**

a) Livestock waste application must not exceed the agronomic nitrogen rate, which is defined as the annual application rate of nitrogen that can be expected to be required for a realistic crop yield goal. Multi-year phosphorus application is allowed when the application is specified in a nutrient management plan and meets the requirements in Section 502.615. Any application must be consistent with nutrient management plan requirements. The agronomic rate must be determined in a manner consistent with this Section and Section 502.615.

b) Livestock Waste Volumes. The estimate of the annual volume of available livestock waste for application must be obtained by multiplying the number of animals constituting the maximum design capacity of the facility by the appropriate amount of waste the animals generate*.*  For this Section, "maximum design capacity" means the maximum number of animals that can be housed at any time for a minimum of 45 days at a CAFO. The following sources may be used to obtain the amount of waste generated:

1) Livestock Waste Facilities Handbook, Third Edition, Table 2-1, incorporated by reference at 35 Ill. Adm. Code 501.200(a);

2) 35 Ill. Adm. Code 560.Table 1;

3) Manure Characteristics, 2nd ed., 2004 (MWPS-18 Section 1), MidWest Plan Service, incorporated by reference at 35 Ill. Adm. Code 501.200(a); and

4) NRCS Agricultural Waste Management Field Handbook Chapter 4, incorporated by reference at 35 Ill. Adm. Code 501.200(a).

c) Nutrient Value of Livestock Waste. For new livestock facilities that have not generated livestock waste, the owner or operator must prepare a plan based on an average of the minimum and maximum numbers in the table values derived from Livestock Waste Facilities Handbook, Third Edition, Table 2-1, 10-6, or 10-7, or Manure Characteristics, incorporated by reference at 35 Ill. Adm. Code 501.200, or 35 Ill. Adm. Code 560.Table 1 or Table 2. If "as produced" or "as excreted" nutrient values are used, the nitrogen value must be adjusted to account for losses due to the type of storage system used, using an average of the ranges in Livestock Waste Facilities Handbook, Third Edition, Table 10-1. Other sources of nutrient values may be used if approved by the Agency. Owners or operators of existing livestock facilities must prepare the plan based on representative sampling and analysis of the livestock waste the CAFOs generate in accordance with Section 502.635(b).

d) Adjustments to Nitrogen Availability. Adjustments must be made to nitrogen availability to account for the following:

1) Nitrogen loss from livestock waste due to method of application, based on an average of the ranges in Livestock Waste Facilities Handbook, Third Edition, Table 10-2; and

2) The first-year mineralization of organic nitrogen into a plant-available form, as obtained from Livestock Waste Facilities Handbook, Third Edition, Table 10-5.

e) Realistic Crop Yield Goal

1) The realistic crop yield goal must be determined for each field where the livestock waste is to be land applied. The realistic crop yield goal must be determined using an average yield over a five-year period from the field where livestock waste is to be land applied. The source of data used to determine the realistic crop yield goal is provided in subsection (e)(2).

2) Whenever five years of data are available for the field where livestock waste is to be land applied, proven yields must be used in calculating the realistic crop yield, unless there is an agronomic basis for predicting a different realistic crop yield goal. The owner or operator must indicate the method used to determine the proven yield. Data from years with crop disasters may be discarded.

A) If five years of proven yield data are not available for the field where the livestock waste is to be land applied, or if an agronomic basis exists for predicting a different realistic crop yield goal, the owner or operator may calculate the realistic crop yield goal using crop insurance yields or Farm Service Agency USDA yields. If either of these sources is used, a copy of the insurance or assigned crop yields must be included with the nutrient management plan.

B) If data is not available on proven yields, crop insurance yields, or Farm Service Agency yields; or if an agronomic basis exists for predicting a different realistic crop yield goal, the owner or operator must use soil-based yield data from the University of Illinois "Average Crop, Pasture, and Forestry Productivity Ratings for Illinois Soils; Bulletin No. 810" (Bulletin 810) or "Optimum Crop Productivity Ratings for Illinois Soils; Bulletin 811" (Bulletin 811), incorporated by reference at 35 Ill. Adm. Code 501.200, to comply with subsection (e)(1) to calculate the realistic crop yield goal.

i) If Bulletin 810 or 811 is used to calculate the realistic crop yield goal, a soil map of the land application areas must be included in the nutrient management plan.

ii) If Bulletin 810 or 811 is used, the realistic crop yield goal must be determined by a weighted average of the soil interpretation yield estimates for the fields where livestock waste is to be land applied.

iii) If Bulletin 811 is used, the owner or operator must demonstrate in the nutrient management plan that the operational management and field conditions of the facility and land application areas meet the requirements for optimum conditions as provided in Bulletin 811.

f) Nitrogen Credits

1) The CAFO owner or operator must calculate nitrogen credits, under Section 502.505(n)(7), for nitrogen-producing crops grown the previous year, for other sources of nitrogen applied for the growing season, and for mineralized organic nitrogen in livestock waste applied during the previous three years.

2) The CAFO owner or operator must calculate nitrogen credits for the mineralized organic nitrogen in livestock waste applied during the previous three years at the rate of 50%, 25%, and 12.5%, respectively, of that mineralized during the first year.

g) Phosphorus. The CAFO owner or operator must develop or amend the plan to determine the maximum livestock waste application rate for each field. The plan for that field must contain the following:

1) The phosphorus content of the livestock waste must be determined in accordance with subsection (c);

2) The realistic crop yield goal of each crop in the field, obtained under subsection (e)(1);

3) The phosphorus amount needed for each crop in the plannedcrop rotation, expressed as P2O5, obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at 35 Ill. Adm. Code 501.200. Determining this phosphorus amount must be based on the realistic crop yield goal for each planned crop and the soil test for available phosphorus (Bray P1 or Mehlich 3 conducted according to the Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in 35 Ill. Adm. Code 501.200);

4) The phosphorus carryover from previous years' application of phosphorus or livestock waste;

5) Soil test phosphorus results for that field; and

6) The maximum livestock waste application rate, consistent with nitrogen-based or phosphorus-based applications allowed under Section 502.615.

h) Nitrogen and phosphorus fertilization rates for the realistic crop yield goal may be obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at 35 Ill. Adm. Code 501.200, or 35 Ill. Adm. Code 560.Appendix A.

(Source: Amended at 48 Ill. Reg. 3196, effective February 15, 2024)