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Ohio Administrative Code

Rule 901:10-2-14 Contents of manure management plan: land application methods.

Effective: November 1, 2026

(A) The land application of manure at each land application area shall be conducted to utilize nutrients agronomically, to be environmentally protective, and to implement practices that minimize nutrient runoff to waters of the state. Land application of manure shall be recorded in the operating record in accordance with rule 901:10-2-16 of the Administrative Code.

(B) The manure application rate shall be based on representative manure analyses, in accordance with rule 901:10-2-10 of the Administrative Code, and soil analyses, in accordance with rule 901:10-2-13 of the Administrative Code.

(C) General criteria for manure application. The manure application rate shall be based on the most limiting factor of rates derived from paragraphs (B) to (G) of this rule, including factors derived from all appendices to this rule, whichever factor is determined to be the most restrictive factor for purposes of protecting waters of the state.

(1) For liquid manure:

(a) The crop nitrogen requirements or removal of nitrogen described in paragraph (D) of this rule, expressed in thousands of gallons of manure per acre;

(b) The phosphate application limits as described in paragraph (E) of this rule, expressed in thousands of gallons of manure per acre;

(c) The restrictions on the rate of liquid manure applied, taken from notes (1) and (4) in appendix A, table 2 to this rule, with rate expressed as a measure of gallons per acre or inches per acre;

(d) The application rate shall not exceed the available water capacity of the soil, as described in appendix B to this rule, and in accordance with the following:

(i) No manure shall be applied if the upper two inches of soil are saturated from precipitation;

(ii) Liquid manure applied to land application areas that are subsurface (tile) drained shall be limited to thirteen thousand five hundred seventy-six gallons per acre per application event; and

(iii) Prior to liquid manure being applied to land application areas that are subsurface (tile) drained, preferential flow paths shall be evaluated. When preferential flow paths are present, the owner, operator, or certified livestock manager shall document the best management

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practices implemented (i.e., use of appropriate tillage practices, reduction of application rates, etc.) to prevent discharge through the subsurface drainage system.

(e) The application rate shall be adjusted to preclude surface ponding and/or runoff from a land application area; and

(f) If liquid manure is applied to land application areas that are subsurface (tile) drained, outlets must be monitored before, during, and after land application and observations documented in the operating record in accordance with rule 901:10-2-16 of the Administrative Code.

(2) For solid manure:

(a) The crop nitrogen requirements or removal of nitrogen as described in paragraph (D) of this rule expressed in pounds per ton of manure per acre;

(b) The phosphate application limits as described in paragraph (E) of this rule expressed in pounds per ton of manure per acre; and

(c) The restrictions on the rate of solid manure applied, taken from notes (1) and (4) in appendix A, table 2 to this rule with rate expressed as a measure of tons/acre.

(3) Manure shall not be land applied on soils that are prone to flooding as listed in appendix A, table 1 to this rule during the periods when flooding is expected unless the manure is incorporated within twenty-four hours of application, directly injected, or applied on a growing crop.

(4) All land applications of manure shall comply with all restrictions contained in appendix A, table 2 to this rule.

(5) For all land application of liquid manures, the owner or operator shall;

(a) Maintain or have access to methods or devices to capture or stop subsurface drain flow if liquid manure reaches the subsurface drain outlets.

(b) Record in the operating record, in accordance with rule 901:10-2-16 of the Administrative Code, the use of drain outlet plugs or other devices and methods to capture or stop subsurface drain flow if liquid manure reaches the subsurface drainage systems.

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(c) Immediately stop all land application activities to a land application area if liquid manure reaches the subsurface drainage systems until written approval has been issued by the director to restart land application activities.

(6) Calculate the total amount of nitrogen and phosphate to be applied to each field, including sources other than manure such as commercial fertilizer or other organic by-products.

(7) Land application of manure by means of surface application shall not occur for a period of twenty-four hours prior to a precipitation event where the weather forecast contains both of the following conditions:

(a) A fifty per cent or greater chance of precipitation; and

(b) Precipitation amounts of one-half inch or greater for the entire precipitation event, which may extend beyond twenty-four hours from the land application of manure.

Obtain a weather forecast at the start of each land application event in accordance with rule 901:10-2-16 of the Administrative Code. If a land application event continues for twenty-four consecutive hours or longer, obtain an updated weather forecast at least once in every twenty-four hour interval during manure application.

(D) The manure application rate for nitrogen shall be based on the following criteria:

(1) The application rate for nitrogen shall be based on utilization of crops at the recommended agronomic rates and based on minimum runoff and leaching that may impact waters of the state.

(2) In determining the recommended agronomic rate for nitrogen, the owner or operator shall do the following:

(a) Determine the nitrogen recommendations or removal rates for the realistic yield goal of planned crops using nutrient amounts from appendix C, tables 1, 2 or 3 to this rule.

(b) Subtract the nitrogen credit for crop residue, legumes, and other sources of nitrogen to be given to the next crop in accordance with values for previous crops given in appendix C, table 4 to this rule;

(c) When applying nitrogen to a grass or legume cover crop that is growing or being established immediately after manure application, manure can be

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applied at the recommended nitrogen rate for the next non-legume crop or the nitrogen removal rate for the next legume crop; and

(d) In accordance with paragraphs (D)(2)(a) to (D)(2)(c) of this rule, the recommended agronomic rate for available nitrogen shall be limited to:

(i) Two hundred twenty pounds per acre for corn crops;

(ii) One hundred fifty pounds per acre for legume crops; and

(iii) One hundred twenty pounds per acre for wheat crops.

(3) In determining how to minimize nitrogen leaching that may impact waters of the state, the owner or operator shall do the following:

(a) Assess each land application area with the Ohio nitrogen leaching risk assessment procedure contained in appendix C, table 5 to this rule;

(b) If the nitrogen leaching risk assessment procedure completed in accordance with paragraph (D)(3)(a) of this rule demonstrates that the land application area has a high nitrogen leaching potential and no growing crop or no cover crop is planted within seven days following land application of manure, then application of manure shall be limited to fifty pounds of applied nitrogen per acre calculated at the time of application from July first to September thirtieth.

Note: the fifty pounds per acre applied nitrogen limitation for manure applied from July first to September thirtieth is based on the total ammonium content plus thirty-three per cent of the organic nitrogen content.

(4) In calculating the application rate of available nitrogen from manure, the figures in appendix C, table 6 to this rule shall be used along with the manure test results conducted according to rule 901:10-2-10 of the Administrative Code.

(5) The requirements of this paragraph may be changed only if the owner or operator can demonstrate to the director nutrient insufficiency in accordance with the pre-sidedress nitrate soil test (PSNT) and plan to address the nutrient insufficiency with the proposed nitrogen application rates in appendix C, table 7 to this rule or other approved land grant university methods. The director may also consider nutrient budget information submitted in accordance with paragraph (B) of rule 901:10-2-09 of the Administrative Code.

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(E) The manure application rate for phosphate shall be determined using the soil test analysis obtained pursuant to rule 901:10-2-13 of the Administrative Code and the following criteria:

(1) Prior to the land application of manure, land application areas shall be assessed with the phosphorus soil test risk assessment procedure in appendix E to this rule. The manure application rate for phosphate shall be limited in compliance with the application criteria established in appendix E to this rule;

(2) The phosphate requirements for the realistic yield goals of planned crops, crop rotations, and\or plant biomass shall be determined using amounts from appendix C, table 1 to this rule;

(3) The phosphate application rate shall not exceed two-hundred fifty pounds per acre unless all of the following conditions apply:

(a) Liquid manure sample results are greater than or equal to seventy-five pounds of phosphate per one thousand gallons or solid manure sample results are greater than or equal to one hundred pounds of phosphate per ton;

(b) The land application area has a soil phosphorus concentration that is less than or equal to fifty parts per million (one hundred pounds per acre) mehlich-III or equivalent;

(c))No manure application shall occur on frozen or snow-covered ground;

(d) The manure is immediately injected or incorporated within twenty-four hours;

(e) No additional phosphate application shall be made for a minimum of three calendar years; and

(f) No manure application shall exceed the recommended agronomic nitrogen rate as described in paragraph (D) of this rule.

(4) Notwithstanding the procedures in this paragraph but subject to the restrictions in appendix B to this rule, for a single phosphate application in a year, the application rate shall not exceed five hundred pounds per acre of phosphate.

(F) Land application for crops or other uses not listed in appendix C to this rule will be considered on a case-by-case basis. The owner or operator shall submit existing published or documented data that is acceptable to the director.

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(G) General criteria for frozen and snow-covered ground.

Manure injection or manure incorporation performed within twenty-four hours at the land application area is the preferred alternative to surface application of manure. If manure is adequately injected or incorporated within twenty-four hours, then the land application area is not considered to be frozen or snow-covered and therefore subject to paragraphs (A) to (F) of this rule.

Solid manure with less than fifty per cent moisture shall not be land applied on frozen or snow-covered ground. Solid manure with less than fifty per cent moisture may be stockpiled at the land application area in lieu of manure application on frozen or snow-covered ground.

The owner or operator shall comply with rule 901:10-2-08 of the Administrative Code, and this rule, and use best efforts to avoid surface application of manure to frozen or snow covered ground by ensuring enough manure storage capacity by November thirtieth of each year for a minimum of one hundred twenty days for solid manure and one hundred eighty days for liquid manure.

In addition to complying with all of the criteria in paragraphs (A) to (F) of this rule, surface application of manure on frozen or snow-covered ground is prohibited unless performed in accordance with all of the following:

(1) Written authorization shall be obtained from the director prior to each surface application of manure.

(2) The manure application rate is limited to ten wet tons per acre for solid manure with more than fifty per cent moisture.

(3) The manure application rate is limited to five thousand gallons per acre for liquid manure.

(4) Applications are to be made on land with at least ninety per cent surface residue cover at the time of application such as good quality hay or pasture field, all corn grain residue remaining after harvest, and all small grain residue cover remaining after harvest. Vegetation or residue shall not be completely covered by ice or snow at the time of application.

(5) Manure ponding shall be prevented.

(6) Manure shall not be applied on more than twenty contiguous acres. Contiguous areas for manure application are to be separated by a break of at least two hundred feet. Areas that are furthest from streams, ditches, waterways, and

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\or surface waters are to be prioritized over areas with the potential for surface water runoff.

(7) Land application areas that are not subsurface drained (tile) are to be prioritized over areas that are subsurface drained.

(8) Setbacks from surface waters and conduits to surface waters, (including grassed waterways and surface drains) shall be a minimum of two hundred feet.

(9) Setbacks shall have at least ninety per cent surface residue cover and vegetation or residue shall not be completely covered by ice or snow at the time of application.

(10) For application fields with slopes greater than six percent, manure shall be applied in alternating strips sixty to two hundred feet wide generally on the contour, or in the case that the field is managed in contour strips with alternative strips in grass or legume, manure shall only be applied on alternative strips. Manure application rates shall be determined for each separate application strip area and not the area of the entire application field.

(11) Any manure application exceeding two hundred and fifty pounds of phosphate per acre is prohibited.

(12) Monitoring.

(a) Concentrated field surface drainage and subsurface drain (tile) outlets shall be visually monitored at the conclusion of manure application and periodically afterwards when weather, temperature increase, snowmelt and rainfall are likely to produce manure runoff. Periodic visual monitoring shall continue until manure is assimilated into the application field and is no longer likely to discharge into waters of the state.

(b) Upon discovering a discharge to waters of the state, the owner or operator shall notify the department within two hours of detection of the runoff event.

(H) The discharge of manure to waters of the state from a facility as a result of application of that manure by the facility to land application areas is a discharge from that facility subject to enforcement pursuant to section 903.16 of the Revised Code except where it is an agricultural stormwater discharge. Where manure has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure and in compliance with best management practices set forth in Chapter 901:10-2 of the Administrative

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Code, a precipitation-related discharge of manure from a land application area is an agricultural stormwater discharge.