

Appendix C Table 6 to Rule 901:10-2-14: Method of Calculating N Availability of Manures

This table can be used to estimate the availability of ammonia and organic nitrogen in the soil. Only about one-third of the organic nitrogen in animal manure is available to crops during the year it is applied, and the remaining two-thirds, residual organic nitrogen, becomes part of the soil organic matter. It is mineralized or becomes available at the rate of approximately five per cent a year. Because ammonia is subject to high volatilization, incorporation factors of time of year and days until incorporation affect the availability of nitrogen.

The first column is the per cent of available ammonia from animal manure. The second column is the per cent of available organic nitrogen from animal manure. The third column is the time of year in which application can be made. The fourth column is the number of days till incorporation.

For example: Using the first row of data, if manure is applied in November, fifty per cent of the available nitrogen comes from ammonia and thirty-three percent of the available nitrogen from residual organic nitrogen in manure if incorporated in less than five days.

Using the second row of data, if manure is applied in November, twenty-five per cent of the available nitrogen comes from ammonia and thirty-three per cent of the available nitrogen from residual nitrogen in manure if incorporation is more than five days after application.

Method of Calculating N Availability of Manures^a			
Available Nitrogen %		Time of Application	Days until Incorporated^b
NH₄	Organic	Date	Days
50	33	Nov–Feb	≤5
25	33	Nov–Feb	>5
50	33	Mar–Apr	≤3
25	33	Mar–Apr	>3
75	33	Apr–Jun	≤1
25	33	Apr–Jun	>1
75	15	Jul–Aug	≤1
25	15	Jul–Aug	>1
25	33	Sep–Oct	≤1
15	33	Sep–Oct	>1

^a The calculations are for all animal manures. It is assumed that 50% of the organic N in poultry manure is converted to NH₄ rapidly and is therefore included in the NH₄ column for calculating available N.

^b Incorporation is the mixing of manure and surface soil.

Source: Ohio Livestock Manure And Wastewater Management Guide – Bulletin 604. M. A. Veenhuizen, D.J. Eckert, K.Elder, J.W. Johnson, W.F. Lyon, K.M. Mancl and G. Schnitkey (1992). Columbus, OH: Ohio State University.