Estimating Nitrogen Losses After A Spring Fertilizer Application (Ohio)

The following tool can be used to assess nitrogen loss and the need for sidedress nitrogen when soil samples are not collected. Soil temperature, nitrogen form, length of saturation, and organic matter all play critical roles in determining microbial activity and resultant denitrification of fall and/or spring-applied nitrogen. As an aid to help make sidedressing decisions, University of Minnesota scientists have developed a simple question and answer point system. We have adapted that point system to Ohio.

	Points	Points Given
1. What N Source was used?		
a. Anhydrous ammonia with nitrification inhibitor	1	
b. Anhydrous ammonia	2	
c. Other fertilizer banded	3	
d. Other fertilizer broadcast	4	_____
2. When was N applied?		
a. After April 20	2	
b. Before April 20	5	_____
3. How much N was applied?		
a. >200 lbs/A	1	
b. 150-200 lbs/A	2	
c. 100-150 lbs/A	3	
d. <100 lbs/A	4	_____
4. What has been the predominant soil moisture status in the field this spring?		
a. Normal	1	
b. Wet	2	
c. Excessively wet (saturated-standing water	4	_____
5. What is the crop condition?		
a. Green > 12 inches	1	
b. Green < 12 inches	2	
c. Chlorotic plants < 12 inches	3	
d. Chlorotic plants > 12 inches	5	_____
Total Points		_____

Use the score and points in the chart below.

Total Points	***Recommendation***
Less Than 13	**Additional fertilizer not recommended**
13 to 16	**Re-evaluate in 4-7 days**
17 or greater	**Add an additional 40-70 pounds of N/A**

The “re-evaluation” option is only viable until you no longer can sidedress. While a total score of 17-18 may merit 40 pounds N per acre, a score of 18 may require higher rates. Research conducted in Illinois has found that 50 pounds N per acre was satisfactory over a wide range of conditions. Keep in mind good judgment is still important to estimate N needs. Also, each field needs to be evaluated individually.