

Soil Fertility Management

Taken from SFM-2 (April 2010), “Making Decisions for Nitrogen Fertilization of Corn Using the Pre-sidedress Soil Nitrate Test (PSNT).”

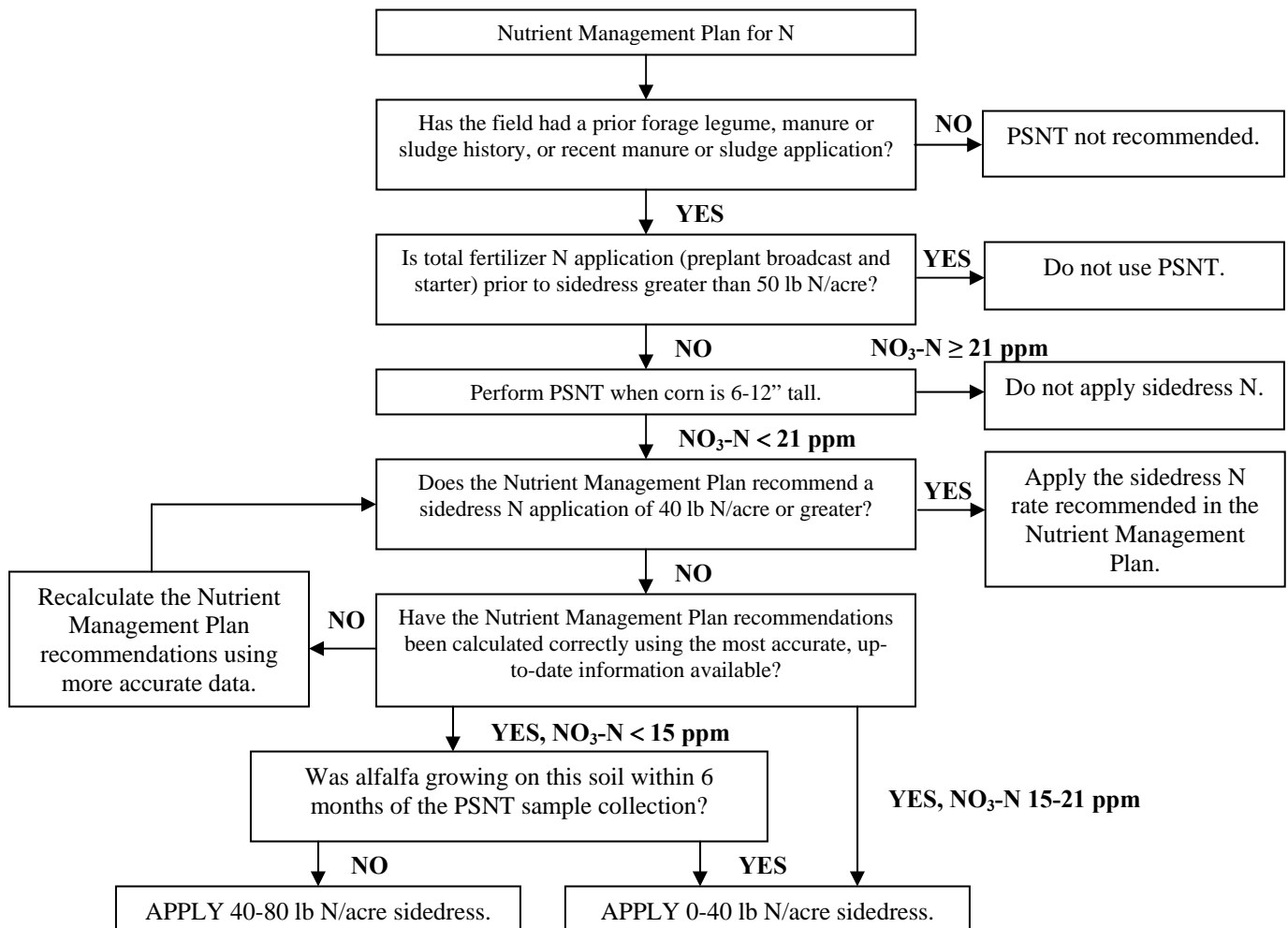


Figure 1. Nitrogen fertilization of corn using the pre-sidedress soil nitrate test (PSNT). (Updated June 2005, F.J. Coale).

Table 1. Site specific factors that would favor choosing a higher or lower sidedress N rate within the recommended ranges based on the pre-sidedress soil nitrate test (PSNT).

Factors that would favor choosing a lower sidedress N rate within the recommended range	Factors that would favor choosing a higher sidedress N rate within the recommended range
Well drained soils	Poorly drained & excessively well drained soils
Silt loam & loam soils	Loamy sands, sands & sandy loam soils
Manure applied 0 – 3 months before PSNT	Most recent manure application was more than 3 months before PSNT
Reliable, recent manure sampling & analysis	Uncertain, old (several years), questionable manure sampling & analysis
Manure spreader calibrated; uniform application	Manure spreader not calibrated; uneven application
Less than 4” of rain within the last 30 days	More than 4” of rain within the last 30 days
Alfalfa was the prior crop	The prior crop was not alfalfa
Legume winter cover crop was grown	Rye, small grain winter cover crop
Ammonium was not credited when calculating the manure application rate	Ammonium was credited when calculating the manure application rate, but may have volatilized
The measured ppm NO ₃ -N was near the high cutoff value in one of the above ranges (i.e., almost 15 ppm or almost 21 ppm)	The measured ppm NO ₃ -N was greater than, but near the lower cutoff value of 15 ppm
Soils with a relatively low yield potential	Soils with a relatively high yield potential