Nitrate forms of N fertilizer are more subject to loss than other forms. For example, calcium nitrate and ammonium nitrate are readily available sources of N for plants, but this N is also subject to immediate leaching when added to soil. Therefore, nitrate forms of N should not be used where leaching is a serious problem. Ammonium forms of N, such as urea or anhydrous ammonia, are preferred sources of N for most crops because they are not subject to immediate leaching when added to soil. Ammonium N must be converted to nitrate N before it can be leached or denitrified. This conversion to nitrate occurs rapidly under warm, moist conditions.

Nitrogen can also be lost by volatilization of gaseous ammonia if urea or N solutions containing urea are surface applied and not incorporated. Because the volatilization loss is difficult to assess and represents an economic loss to the farmer, all urea-containing fertilizers should be incorporated.