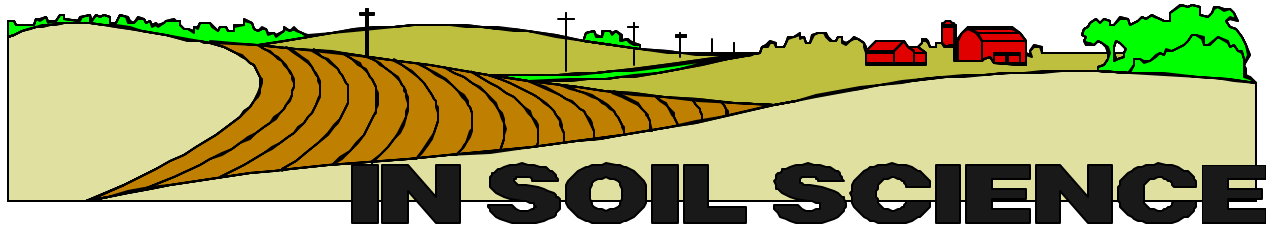


NEW HORIZONS



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Terminology used for Reporting Lime Recommendations

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Although all of the states in the upper Midwest region use a combination of chemical purity and particle size to rate agricultural lime, there is a considerable amount of variability in how individual states report lime recommendations. This can lead to confusion, particularly when growers are near state borders and may deal with vendors from several states. In addition, lime recommendations made by out of state laboratories may be reported in units other than the system used in Wisconsin.

Aglime effectiveness is based on two criteria. The first is purity, which is a measure of the chemical capacity of the material to neutralize acidity compared to pure CaCO_3 . Dolomitic limestone, which is commonly found in Wisconsin, typically has a CaCO_3 equivalent of about 109%. Calcitic limestone is generally about 100% and specialty products or industrial byproducts can range from 23 to 30% to as high as 179% for something like quick lime (CaO). This method of evaluating lime is quite consistent across all the states in the upper Midwest.

The other criterion for evaluating lime is the fineness of the material. In Wisconsin, liming materials are analyzed by the use of an 8-, 20-, and 60-mesh sieve. Based on the particle size, these fractions of the lime are then given an effectiveness value based on the performance of the material. For example, for Wisconsin the various sizes are assigned effectiveness factors of 20, 60, and 100% for the material passing the respective sieve sizes. Other states in our region follow a similar method of evaluating the fineness of lime products in their state. Minnesota uses the exact same size criteria. Illinois uses a 30-mesh instead of a 20-mesh sieve and also includes a 4-mesh sieve, as does Iowa. Michigan only uses the 8- and 60-mesh sizes in their evaluation. Therefore, with these minor differences noted, and some variation in the relative effectiveness of each fraction, there is little difference in how neighboring states evaluate the fineness value of a liming material.

The main source of confusion comes from the terminology used by the various states to report lime requirement values to clients. In Wisconsin, we list a lime requirement for a field in tons per acre of 60-69

and 80-89 neutralizing index (NI) lime. In Minnesota, lime recommendations are made in pounds of effective neutralizing power (ENP) per acre, adjusted for moisture content. Liming products are evaluated based on their pounds of ENP per ton. Except for the moisture adjustment,

essentially this is the same as Wisconsin's NI reported on a pounds/ton basis. This was done to allow them to evaluate the many municipal and industrial byproducts from the Twin Cities area and compare them to traditional ground limestone. Illinois recommendations are made in tons of lime per acre based on the effective calcium carbonate (ECC). This is a product of the calcium carbonate equivalent (CCE) and fineness factor. Michigan also reports lime recommendations in tons of lime per acre based on their evaluation of the CCE.

In summary, when dealing with lime recommendation terminology from a neighboring state, keep in mind that the criteria used to evaluate the lime were quite similar to those used here in Wisconsin. If the ECC or ECCE is approximately 85, this should be comparable to our 80-89 NI material. The lower the value the more liming material that would be required to neutralize the acidity in a field. The ENP value reported by Minnesota can be divided by 20 to convert to our Wisconsin NI value. For example a material with an ENP of 1000 lb/ton would be equivalent to a NI of 50. For more information on the Minnesota system you may visit their web site at www.mda.state.mn.us. This site also contains analytical information on many lime byproduct materials generated in the Twin Cities area.