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# What does Fertilizer Quality Mean to You?

by D. Keith Reid, CCA, P.Ag.

Fertilizer quality covers both the chemical and the physical make-up of the fertilizer. Chemically, you want to know if the fertilizer actually has the nutrients that you are paying for, and that it is free from other compounds that might hurt your crops or the environment. The rules under the *Canadian Fertilizer Act*, along with the regular sampling and oversight programs of the Canadian Food Inspection Agency do a pretty good job of making sure the chemical criteria are met.

The same cannot be said for the physical attributes of the fertilizer. For this, you are on your own.

## For granular fertilizers, the main physical criteria are the granule size and stability

Granule size affects the flowability (small granules bridge more easily) and spreadability (large granules travel further from a spinner spreader) of the fertilizer, but the actual size of the granules is less important than the consistency of granule size. As fertilizers are handled, different granule sizes tend to segregate. Fertilizer dropped from an elevator into a pile will end up with the smaller granules in the center and the larger granules to the outside. This is not a problem if all the

ingredients in a fertilizer mix have the same proportion of large and small granules, but it has huge impact if two materials have different size distributions. Suddenly the mix of your fertilizer is not consistent, so as it is applied to the field there is the risk of under-feeding the crop in some areas while causing fertilizer injury in others.



## The stability of the granules depends on the manufacturing processes used to make the granule, and the conditions of handling and storage.

Nitrogen prills tend to break down under handling much more quickly than granulated nitrogen because of differences in the manufacturing process. Fertilizer that has gotten damp in storage may be lumpy or have excess fines, both of which can contribute to blocked delivery tubes and

uneven distribution of fertilizer.

The final thing to be aware of is that some fertilizer materials will absorb moisture out of the atmosphere very quickly. Zinc sulphate is one example, although new granulating techniques have helped to reduce this. Try to avoid blending these hygroscopic materials too far ahead of when it is applied to the field, to avoid problems with lumps.

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This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCA's.