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WHICH NUTRIENT SOURCE IS BETTER?

There is a lot of confusion over organic and commercially produced fertilizers. Every fertilizer, whether it is called organic or not, is a chemical fertilizer that supplies nutrients for plant growth. Manures, composts, and mulches all break down in the soil to release the same nutrients as commercial fertilizers.

One of the biggest differences between commercial and organic nutrient sources is that organics usually must first be decomposed by soil microorganisms before their nutrients are available to plant roots. The speed of this breakdown process is often difficult to predict...and it can range from weeks, to months, or years for the nutrients to be released. Frequently, these nutrients are still being released from the organic fertilizers long after the crop has been harvested or become dormant.

With commercially produced fertilizers, the nutrients are rapidly available to nourish the plants. It is usually easier to manage these nutrient sources since their composition is consistent and their behavior is well understood.

The composition of organic nutrient sources, such as manure or compost, reflects whatever was present in the animal feed, the bedding, or the starting compost material. This commonly results in the organic material containing an imbalance in the ratio of essential plant nutrients. For example, long-term use of manures often results in a buildup of soil P because crops typically require all the N in manure while not requiring all of the P.

The nutrient content of commercially produced fertilizers is carefully controlled and blended to meet the needs of each specific crop and field. A soil that already contains an adequate supply of any nutrient may not receive additional application of that fertilizer for a season...thereby avoiding unnecessary and wasteful inputs.

Farmers may be reluctant to fully utilize manures due to their bulky nature and low nutrient concentration. For example, to supply N to a typical corn crop using commercial fertilizer urea, a farmer might apply 430 **pounds** of material per acre. Using dairy manure, a farmer would need to apply up to 40 **tons** of manure per acre to provide the same amount of available N. The labor and energy costs associated with applying that much material are not small!

Clearly, organic nutrient sources may be excellent materials for crop production and should always be used appropriately, but there is no need for confusion over the superiority of any source. All nutrient sources.... organic or commercially-produced...can play an important role in sustaining healthy food production.

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Abbreviations in this article: N = nitrogen; P = phosphorus.