

Manure vs. commercial fertilizers: It's the same thing

KEY POINTS

- » **KEY POINT NUMBER 1**
Nearly 90 percent of corn acres receive fertilization.
- » **KEY POINT NUMBER 2**
Manure delivers N, P and K, plus micronutrients and organic material to the soil.
- » **KEY POINT NUMBER 3**
Plants don't care how fertility is delivered.
- » **KEY POINT NUMBER 4**
Consistent manure analysis is vital to the success of a manure application program.

In Agronomy 101, we learned that nitrogen, phosphorus and potassium — N, P and K — are essential to the development of production grains like corn and soybeans. Generally speaking, the plant doesn't care how the nutrients are delivered, whether it is from the soil, a commercially produced-fertilizer, or an animal-based fertilizer. It only cares that the nutrients are available.

Most Iowa crop growers use commercially available fertilizers because they're a consistent product and a system is in place to deliver them to the farm field without too much hassle.

But are they free? Heck, no! Crop growers value the role fertilizer plays in producing profitable yields year after year. As fertility units are removed by the crop, they must be replaced each year in order to grow the same or better crop the following season. (See page 2)

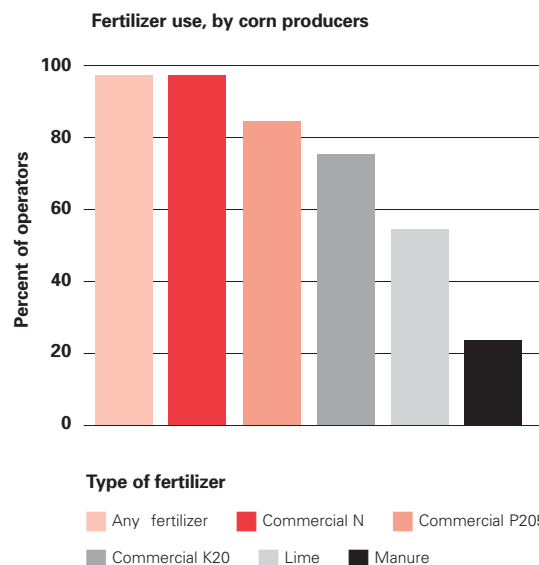
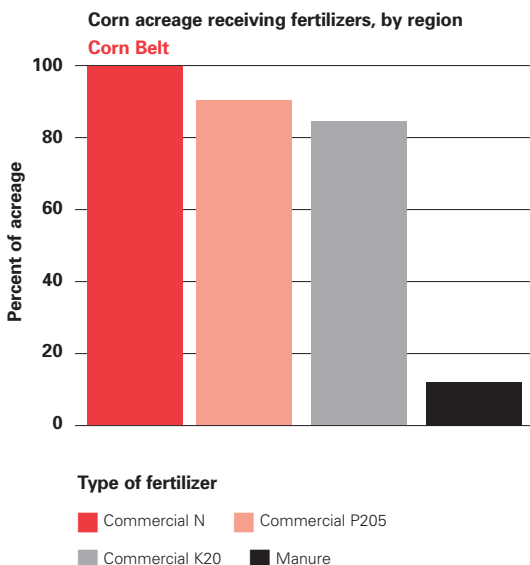
How much fertilizer is being used each year? Take a look at the USDA chart below, describing the corn acreage receiving fertilizers by region. This shows that crop growers are willing to invest in fertilizer. More than 80 percent of these corn acres are receiving P and K, and nearly all are receiving nitrogen inputs.

OPPORTUNITY Point



On average, 85 to 90 percent of all corn acres are fertilized with N, P and K. Less than 20 percent of those acres apply manure. That means another 60 percent of corn acres could be

using manure as their fertilizer, once a system of delivery is in place.



Opportunity

Crop growers understand and believe in the value of fertilizer. But what if they could get even more with manure than other types of commercial plant food products?

Growing pigs need micronutrients as part of the optimal diet. But their bodies don't use all of the nutrients in their feed. The remaining nutrients, like copper and zinc, as well as iron and manganese, remain in the manure. Plants, like pigs, have been shown to benefit from the inclusion of these same trace minerals.

But that's not all. Along with the N, P and K, manure delivers a substantial amount of organic material, essential to renew soil quality and battle soil compaction that can reduce the ability of a plant's roots to penetrate the soil and draw nutrients.



8 reasons to trust the value of hog manure

Manure hasn't changed, but over the years our attitude toward its value and role in agricultural production has. In a report by Jerry Hatfield, laboratory director of the USDA-ARS National Soil Tilth Laboratory in Ames, the benefits of manure as an agronomic input are outlined.

Major points include:

1. Manures provide positive short- and long-term benefits to the soil. These changes are derived from physical, chemical and biological responses to manure. Organic materials contained within manure increase the plant availability of nitrate-N and P; increase the CEC; increase soil organic matter; decrease the C:N ratio and increase infiltration rate and soil water-holding capacity through changes in soil organic matter. The absolute degree of change varies among soils, but these trends are evident in nearly all studies presented.
2. Manure is an economical substitute for commercial fertilizers.
3. Swine producers could increase profits if they utilized manure as a resource to supply nutrients for corn production.
4. Studies suggest there is a large untapped potential for the profitable use of manure nutrients in crop production across the U.S.
5. Manure may restore eroded soils to higher levels of productivity. In fact, a 1993 study showed that the value of manure as a soil restoration material for eroded soils was sufficiently greater than its application on non-eroded soil.
6. Despite the reduced availability of manure N, crop yield increases normally occur with manure application.
7. Manure is a valuable and under appreciated soil resource.
8. There is ample documentation that shows manure can increase the quality of the soil, enhance and stabilize crop production and be managed without imposing an environmental risk.

| Micro-nutrients found in pig manure* | | | | |
|--------------------------------------|-------------|-----------------------|-------------|-----------------------|
| Phase | Zinc | | Copper | |
| | "Diet, ppm" | Excretion (grams/day) | "Diet, ppm" | Excretion (grams/day) |
| Nursery | | | | |
| prestarter | 2,000 | 0.65 | 240 | 0.084 |
| starter | 125 | 0.08 | 240 | 0.186 |
| Grower-finisher | 125 | 0.23 | 15 | 0.027 |
| Sows | | | | |
| gestation | 125 | 0.20 | 15 | 0.024 |
| lactation | 125 | 0.54 | 15 | 0.065 |

*North Carolina State University, North Carolina Cooperative Extension Service AG-60

Sustaining cropland: A definition

According to Webster's Dictionary, the term "sustainable" applies to anything that can be "maintained at length, without interruption, weakening or losing in power or quantity."

Hog manure sustains crop acres by providing primary nutrients, micronutrients, trace minerals and organic matter, assuring environmental sustainability for years to come.

IN THE NEXT ISSUE

- » WHERE'S THE VALUE?
- » THE IMPORTANCE OF TESTING MANURE
- » FOUR KEY QUESTIONS TO ASK YOUR TESTING LAB