

Guest analysis

Liquid organic fertilizers: reputable and reliable, or the reverse?

By CCOF

Over the past several months, we have become increasingly concerned with the prevalence of perfectly flowable high nitrogen liquid fertilizers commonly available to organic growers. While larger concerns remain about the role of off-farm high nitrogen inputs, there are also short term potential issues with product formulations. CCOF (California Certified Organic Farmers) has increased its efforts to ensure the integrity of inputs used by certified organic growers. This article is a discussion of our concerns, recent events and plans to address the situation in the future.

The Role of Nitrogen Fertilizers

Nitrogen is essential to plant growth, and the nitrogen cycle is an important concept for organic agriculture, overall. Most farming rotations will acknowledge this cycle by cover cropping whenever possible to collect free nitrogen from the air in plant biomass that is incorporated to the soil.

Nitrogen can also be supplemented by using soil amendments that add to the organic matter content of the soil, thus providing more humus particles that serve as sites for slow release nitrogen fertilizers. This can be done by using compost for both short term fertility and long term soil building, and enhancing the soil improvement program with liquid or sidedressed fertilizers with faster availability.

The need for supplemental products is particularly great in heavy feeding,

shallow-rooted crops that are in the ground for a whole season, such as strawberries. They may also be useful in cooler weather when nutrient cycles in the soil are slower at providing plants what they need, and in soils that have not yet built their organic matter up enough to provide nutrients throughout the season.

Fertilizer Formulation

The nitrogen in fertilizers used in organic production must come from natural sources and not from petroleum or ammonia-derived fertilizers like ammonium nitrate or synthetic urea. Natural materials high in nitrogen are usually proteins or high protein feedstock like fish, blood meal, meat or feathers, and manures. Worm castings can be quite high in nitrogen, and so can produce trimmings, kitchen waste, and food processing by-products.

The rule of thumb in fertilizer manufacture is that every 6.25% protein turns into 1% nitrogen. Therefore, a typical fish fertilizer at 5% N would have started with a product that is 31% liquid protein, or 62% dry weight protein, since liquid products are often half water and half dry matter. Innovative companies try various approaches to concentrate the nitrogen more, such as evaporating the water further, adding specific microbes which are claimed to have a further concentration effect, or experimenting with ultrasound technology. However, liquid fertilizers that claim more than 6% nitrogen seem improbable through normal chemistry.

Concerns Deepen

Recently, the organic fertilizer manufacturers have come under increased scrutiny from certifiers, growers, Organic Materials Review Institute (OMRI), and the California Department of Food and Agriculture (CDFA). One product, Biolizer XN, which was 6% Nitrogen, was removed from the market voluntarily after a CDFA investigation. While intentional wrongdoing was not publicly stated by either CDFA or the company, it has affected the rest of the organic fertilizer market by making conscientious growers more suspicious of the other products on the market with even higher analyses.

Under its recently revised policies, OMRI is beginning to take an approach to product review that increasingly relies on inspections and audits of manufacturing sites. After all, if all growers are inspected thoroughly, why shouldn't organic fertilizers be also?

Recently, some fertilizer companies approached the CDFA asking for them to regulate and label fertilizers for organic production. This would fall in the fertilizer division of CDFA and not the organic program, and would likely require additional legislation. Therefore, it is not likely to happen in the near future.

CCOF is heading towards requiring that liquid fertilizers either be listed by OMRI or WSDA, or else CCOF will perform our own site visits and audits. It will not be automatically acceptable for growers to use liquid fertilizers that are not listed. CCOF is also exploring options for requiring site visits in the near future of specific materials brought into question by growers or other parties.

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