

FERTILIZERS: HOMOGENIZED vs. NATURAL ORGANICS

You have a choice between homogenized or natural organic fertilizers. Two industry experts debate the merits of each.

Homogenized: a time-honored process

by Art Mondak, Lebanon Chemical Corp., Lebanon, Pa.

It appears that the process of unending change has come full circle, returning to use of "natural organic" fertilizers once again. Environmentalists and ecologists assert that we can reduce groundwater contamination by replacing modern fertilizers with natural organic materials. Unfortunately, such a retreat would have harmful results, and would fail to accomplish its objectives.

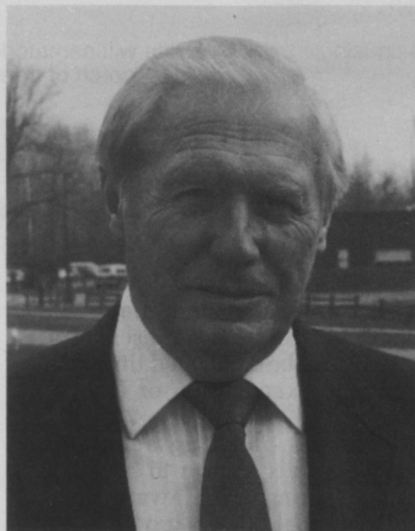
Natural organic fertilizers were used early in our nation's history. Pilgrims used natural organic fertilizers: a fish dropped in a hole, with corn seed on top. The fish, through microbial action in the soil, decomposed and fertilized the corn plant. This worked, but can you imagine fertilization being done like that today?

Commercial fertilizer manufacturing began in this country almost 150 years ago. The first fertilizers were simple blends of N-P-K. The elements were too disperse in these early blends.

Eventually, development of the process known as continuous ammoniation was begun, and homogenized fertilizers were born.

When I started in the fertilizer business with the American Agricultural Chemical Co. in 1965, only homogenized fertilizers were available for agricultural, turf and ornamental uses. Homogenized fertilizers could be manufactured to address the consumer's specific needs. The American Agricultural Chemical Co. was one of the first to produce fertilizers designed for turf use, 10-6-4 and 12-4-8.

Natural organic fertilizers were also available, including block meal,



Art Mondak: modern manufactured fertilizer products are safe and efficient.

cottonseed meal, sludge, tankage and others. However, these natural organics were very expensive to use compared to manufactured homogenized fertilizers.

Safety, efficiency standards

The next major development in commercial fertilizer manufacturing came in response to demands for greater safety and efficiency. If the release of nitrogen could be slowed, then it would be possible to have both quick green-up and long-lasting color and growth. Through the development of synthetic organic nitrogen, these goals were met.

Urea and formaldehyde were combined to produce nitrogen that fertilizes through a process identical to the

decomposition of natural organics. Microbial action in the soil, along with moisture and temperature, gradually release nitrogen to meet the growing plant's need for fertilization.

Urea formaldehyde products (commonly referred to as methylene ureas) comprise a family of synthetic organic nitrogens. Using these nitrogens is only a part of a good turf fertilization program. The correct ratio and balance of N-P-K with secondary elements such as iron, sulfur, magnesium and manganese are very important for total turf feeding.

University researchers have shown that the grass plant assimilates N-P-K in a 3-1-2 to 5-1-2 ratio. However, it is not merely the N-P-K in a bag of fertilizer that is important, but how the product is made. When fertilizer is manufactured using continuous ammoniation, all of the major and minor elements are put into slurry, and methylene urea is injected as a liquid into the slurry. The end result is a finished product that is agronomically sound.

This process provides maximum availability of all plant food nutrients, without leaving excessive elements that can find their way into groundwater. Therefore, environmentalists and ecologists who are looking for fertilizers that are environmentally sound should look favorably at modern manufactured fertilizer products.

Rather than returning to the methods of the pilgrim, though, we have available a time-proven process that satisfies the agronomic needs of growing plants while protecting the environment for current and future generations. □

Natural organics: new aroma, new image

by James Spindler, EnviroGro Technologies,
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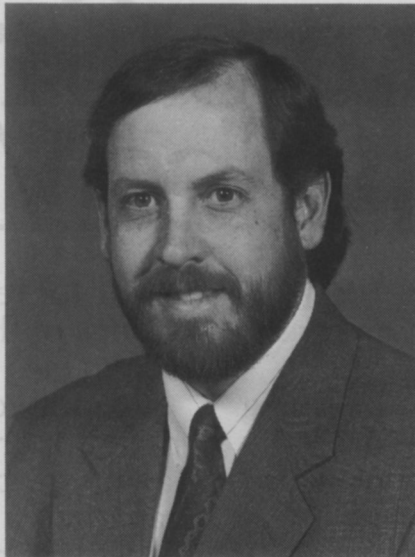
Our first thought of natural organic fertilizers appear as a stereotype of an unprocessed material that is difficult to handle, offends a person's sense of smell and belongs on farm fields. That has all changed, thanks to improved process technology and quality control.

Natural organic fertilizers are still manufactured from the byproducts of various industries. There are, however, new, often high-tech, manufacturing technologies available in the areas of drying, granulating, dust control, and odor control that create very acceptable final products.

The bottom line in making a fertilizer purchase decision is, "does the product give affordable results while being easy to handle?" With today's natural organic fertilizer, the answer is a resounding "yes".

Natural organics are the original slow-release fertilizer that many synthetic slow-release fertilizers strive to mimic. The natural organics rely on soil biota to release the nutrients, and are also the original homogenous fertilizers. All the nutrients are contained in each granule. These products also feature a very low burning potential, micronutrients, and large amounts of organic matter.

Most are granular, relatively dust free, and easy to spread. Some, such as sludges, are excellent for melting ice or frost. Processed natural organic fertilizers have been included in university turf and agronomic trials since the early part of this century. Recently, a wide variety of natural organic products have been included in university trials across the U.S. and Canada. In conversations with researchers, and in reviewing the literature, one learns



Jim Spindler: Organics are now affordable, easy to handle.

that natural organic fertilizers perform in the areas of turf quality as well and often better than their synthetic counterparts. Specifically, research has shown that natural organics, due to their slow release nature, are often a more efficient nutrient source than some synthetic slow release fertilizers. This feature is valuable in that clipping yields are reduced while maintaining high quality. In addition, natural organics have been linked in some studies to reduced thatch layers, increased soil microbe activity, and decreases in both disease and insect occurrence.

Easy on the environment

Besides being an excellent nutrient source, the use of natural organic fertilizers is beneficial to the environ-

ment. They provide a beneficial reuse of our society's waste products that often would consume limited landfill space or be dumped in environmentally sensitive locations, such as the oceans or other waterways. While being efficient and effective fertilizers, natural organics have proven themselves to be beneficial in helping to protect groundwater, and have performed comparably to synthetic slow release fertilizers in ground water studies.

Natural organic fertilizers are exciting because of their diversity and flexibility. They come from a variety of sources, including sewage and industrial sludges (tanneries, paper mills, cheese factories), animal production and processing operations, seaweed and other sources. Each of these products has different characteristics, much as synthetic fertilizers have varying characteristics. Natural organics are versatile in that they can be used in a variety of applications and in combination with other fertilizers. The attributes of both natural organic and synthetic fertilizers can be combined to create a superior product.

Look beyond price

It is said that natural organics are more expensive; sometimes they are. However, when making a fertilizer purchase decision, look at the whole package. Natural organic fertilizers typically have large amounts of water insoluble nitrogen (WIN). Some products have greater than 90 percent of their nitrogen as WIN. When comparing the actual cost of nitrogen on a per unit of WIN basis, it turns out that natural organics are a bargain! Nitrogen is not the only nutrient in natural organics which is slow release; in fact, all the nutrients are. The slow release nutrients coupled with high organic matter content, and product versatility give natural organics a much greater value than a simple N-P-K fertilizer.

Certainly, natural organic fertilizers are an old concept, however, the modern versions of these "original" fertilizers have proven themselves valuable in landscape maintenance, and are here to stay. **LM**

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