

In the past, I have been guilty of oversimplifying the importance of carbon as a food source for soil microbes. I said soil microbes eat carbon and that carbon comes from the amino acids. Using the amount of carbon present in a given fertilizer is a convenient yardstick to measure its food value for soil microbes. Because of that, some manufacturers of synthetic nitrogen sources think that their products feed the soil microbes because they contain carbon compounds. Products such as urea, methylene urea, urea formaldehyde and IBDU all contain carbon compounds, but these carbon compounds do very little, if anything, to feed the soil microbes. All these products do a wonderful job of feeding the plant, but they do little or nothing for the vital soil microbes. If carbon was truly the food source for soil microbes, coal dust would be the best fertilizer in the world.

The true food source for soil microbes is amino acids. Amino acids are complex structures of carbon rings held together by peptide bonds. These structures are so complex that they are not well understood even by most organic chemists or microbiologists, but they all agree that amino acids are the food source for the soil microbes. While I am not an organic chemist or a microbiologist, from what I understand, it is the peptide bonds between the carbon rings that contain the energy that soil microbes require. The microbes are able to break these bonds to obtain the energy that they require. They use this energy to assimilate the carbon. Therefore, the more amino acids that are present the more energy that will be available for the soil microbes to use in the assimilation of the all important carbon.

Amino acids can come from three different sources: decaying animal tissue, decaying plant tissue or soil organic matter. Synthetic fertilizers contain none of these sources. However, because some of them do contain carbon compounds they are usually referred to as synthetic organics, but they are devoid of amino acids. Therefore the soil microbes don't have any energy source that will help them assimilate the carbon that is available.

Nature Safe contains proteins that are made up of amino acids derived from animal processing. According to a research paper published by Dr. George Lazarovits from Agriculture and Agri-Food Canada, "Of the numerous products tested proteinaceous products derived from the animal processing industries such as Nature Safe, were found to be the most consistent in their effects for increasing soil microorganism populations while at the same time reducing the populations of a spectrum of plant pathogens including bacteria, fungi and nematode species." Furthermore, Dr. Lazarovits' work showed that synthetic fertilizers did not increase microbial populations, and they actually produced small decreases in numbers. The carbon in the synthetic fertilizers did not serve as food for the soil microbes. Nature Safe, on the other hand, produced between a twenty-four and a forty fold increase in soil microbes within 76 hours after it was applied.

If a your only goal is to provide a nitrogen source for his turf, one of the synthetic organic products would certainly be a good choice. However, if you are interested in feeding the soil microbes and letting them take care of the plant's needs while at the same time reducing populations of disease causing organisms and improving the overall health of the turf, then Nature Safe should be your product of choice.