AGGRAND®
Natural Organic Products
Lawn • Garden • Agriculture

Converting To An Organic Or More Sustainable Cropping System

Converting to an organic fertility program will increase the productivity and quality of any cropping system in the long run. The length of time it takes to convert to a more sustainable system (one that reduces the number of non-renewable inputs) depends on the degree of degradation of the biological ecosystem, which is impacted by:

1) The addition of toxic substances to the system.

2) The continuous monocropping in the absence of a viable crop rotation plan.

3) The lack of attention to soil chemical imbalance (i.e. base saturation percentage out of balance).

4) Soil compaction from the overuse of heavy machinery on the fields.

5) Practices that reduce the presence of organic matter in the top 6" of soil.

Each one of these factors needs to be addressed in some fashion, but it takes at least three years in most cases to see meaningful results when converting to a more sustainable system. It takes time to detoxify the soil and open up the soil pores so that the soil microbes will multiply and begin to release nutrients, as crops need them.

Many inputs used in modern agriculture are toxic to soil microbes, beneficial insects, and soil invertebrates such as earthworms that cycle nutrients and make them readily available to plants. Each grain of healthy soil (about a thimbleful) contains several billion microbes including bacteria, fungi, actinomycetes, and algae. Fungi are the primary invaders. They break down residue left in the highly aerobic surface layer to a point where bacteria and actinomycetes can continue the process in the top 2-6" of soil. The final result is humus, which provides highly available nutrients to plants. Microbes produce their weight in humus everyday. Some bacteria and algae also fix free nitrogen from the air, which contains 78% nitrogen. In a healthy acre of soil these microbes fix 100 Ibs. per acre of nitrogen into plant available forms each growing season. In addition, earthworms produce 700 Ibs of casting in one acre of healthy soil each day. Beneficial insects digest other insects, nematodes, and residue producing even more plant food.