

Agricultural Sustainability and An Innovative Approach to Safer Production Increases

**by
Dorman Cox**

According to the US Dept. of Agriculture, there are approximately 940 million acres of land in the US being used for farming. Our farmland consumes about 41% of the total US land area.

Organic farming has been one of the fastest growing segments of U.S. agriculture for over a decade. Certified Organic cropland more than doubled between 1992 and 1997, and doubled again between 1997 and 2003.

By 2003, Organic farmers in 49 states had dedicated 2.2 million acres of cropland and pasture to organic production systems.

According to the International Fertilizer Association, over 21 million tons of N.P.K. fertilizers are used annually in North America, and over 154 million tons are used world wide (this does not include natural or organic fertilizers). At a cost of \$150-\$200 per ton, North American farmers spend about \$4 billion per year, and farmers worldwide spend about \$30 billion per year on N.P.K. fertilizers.

PANNA

Pesticide Action Network North America, in a report dated August 1999, stated that as of 1996 commercial fertilizer use has doubled in the U.S. since 1960, growing from 25 million tons to 53 million tons in 1996. Agricultural nitrogen use increased four-fold from under 3 million tons to about 12 million tons during that time. Conventional agricultural pesticides peaked in the early 80's and leveled off at about 771 million pounds of active ingredient—or about twice the amount used in the early 60's.

Of the \$175 billion spent by U.S. farmers to grow crops in 1996, nearly \$20 billion went to the agrochemical industry. Chemical fertilizers accounted for about \$11 billion and pesticides about \$9 billion.

Global cereal grain production has increased by 40% in the last 40 years, (three cereal grains - wheat, rice, and corn - provide 60% of the world's human food). It is projected that world-wide food production will have to double again within the next 50 years in order to meet growing population needs. This increase in agricultural output is necessary to maintain the current status of health and nutrition worldwide. For reasons of global political and social stability, it is essential that we meet these needs.

If we are to meet these increased agricultural production projections, then we must assume that we will also have to increase our water, fertilizer, and pesticide use by 50%.

Agriculturalists are the chief managers of terrestrial 'usable' land. It will be their challenge, and their responsibility, to not only double the agricultural production needed in the coming years, but to do so in ways that do not further compromise environmental integrity.

The Problem

Today's agricultural practices are causing a severe loss of our natural ecosystems. By adding significant amounts of environmentally detrimental nitrogen, phosphates, and pesticides to our farmland we are increasing the level of toxins and pollutants in our ground water and surface water at an alarming rate.

The Clean Water Act, originally known as the Federal Pollution Control Act was enacted by Congress in 1948, the Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. They knew the problem was serious then, and it's a lot worse now. Both houses of Congress recently unanimously allocated \$25 billion to water pollution clean-up projects.

It is known that when N.P.K. fertilizer is applied to crops, that only about 30-50% of the nitrogen and about 45% of the phosphorous is used by the plant, the rest of the fertilizer either becomes locked up in the soil, or is lost to run off. Run off of N.P.K. fertilizers pollute our streams, rivers, lakes, and even the ocean.

Increased fertilizer use over the last several years has almost doubled the total annual nitrogen and phosphorous additions to the global terrestrial ecosystems. This, at least in part, has added significantly to our global warming problem, hypoxia (oxygen deficiency) in the Gulf of Mexico and other lakes and streams, and fish die off at the mouth of numerous rivers leading to the ocean.

It is estimated that over 1/3 of the water wells in our farming communities are contaminated with nitrates, making them unsafe for human consumption. Nationwide health and environmental costs, as a consequence of pesticide use alone, are estimated to be about \$8 to \$12 billion per year.

Further increases in nitrogen and phosphorus application are unlikely to be as effective at increasing yields due to diminishing returns with larger applications. The highest efficiency of nitrogen fertilizer is achieved with the first-time addition of nitrogen to the soil. Efficiency declines with subsequent additions, and even more so at higher levels of soil supplementation.

The coming few years are likely to determine the fate of our ecology. Future agricultural practices will shape, perhaps irreversibly, the surface of the earth, including its species, and biogeo-chemistry.

We are losing our natural ecosystems at an alarming rate. Our natural resources are diminishing, the fishing industry is failing, and our recreational industry is being impacted by the pollution of our lands and waterways.

More importantly, these toxins are having a huge impact on human health. Even though we

claim to have some of the best health care in the world, Americans of today suffer from more illnesses and diseases than ever before. Our health care costs are climbing. The cost for water filtration and purification is on the increase due to the increased amounts of chemical pollutants being found in our water supplies.

Substantially greater public and private investments in technology, research and natural alternative agricultural fertilization is essential to meet our current and future societal need to feed our growing population without further destroying our environmental integrity.

The Solution

Currently there is ongoing research by several major universities and other scientist worldwide in the area of silica based fertilizers. Results of this research and testing show great promise in agricultural sustainability and the ability to increase crop production, while at the same time reduce the need for N.P.K. fertilizers.

Research has shown that silica fertilizers have the ability to remineralize the soil, increase crop production by 20-50%, increase nutrient values 20-50%, lower production costs, increase resistance to drought and freezing, decrease the amount of water needed for irrigation, and increase plant resistance to pests and insects.

Environmentally, silica fertilizers are extremely important because of their ability to unlock locked up phosphates in the ground and make them plant available. Silica fertilizers reduce the amount of water needed for irrigation. Most importantly, silica has the ability to neutralize toxic chemicals such as insecticides and pesticides, as well as many other toxic commercial chemicals and pollutants.

The U.S Senate recognized in 1936 that most of the worlds farmland was depleted of most all of the essential minerals needed grow healthy, nutritious crops. Senate Bill 264 of the 74th Congress stated that; the fruits, vegetables and grains we eat today are starving us to death; no man of today can eat enough fruits and vegetables to supply his body with the minerals and vitamins he requires to stay healthy.

If society is to maximize the net benefits of agriculture, there must be a more thorough understanding and accounting of alternative agricultural practices.

Silica based fertilizers possess the ability to revitalize and restore the world's agricultural lands back to an organic state.

Over the course of the next 10 years silica based fertilizers will play a major role in cleaning up polluted land and waterways, remineralizing depleted soils, and increasing crop yields per acre.

Ee-Wah-Kee, Inc.'s Contribution to this Process of Restoration

Ee-Wah-Kee is a Native American term meaning "the clay that heals".

Ee-Wah-Kee, Inc. is currently mining, processing, and marketing internationally a very high

quality, high content amorphous silica clay referred to as pyrophyllite.

Ee-Wah-Kee, Inc. through its own mining properties and other contractual agreements has access to a virtual unlimited supply of high quality pyrophyllite clay, and pristine water from an ancient underground aquifer. Both possess properties capable of transforming our lands and waterways.

Ee-Wah-Kee, Inc.'s intentions and goals are to provide an increasing number of products to the agricultural industry to help re-mineralize and revitalize America's farmland and to cleanup our waterways.

Ee-Wah-Kee Inc.'s intentions and goals are to provide the most advanced all natural fertilization products to the agricultural industry to help re-mineralize and revitalize America's farmland.

Ee-Wah-Kee Inc. is dedicated to funding and participating in ongoing scientific research and testing to be able to provide America's farmers with the most advanced research and alternative fertilization products available today.

Ee-Wah-Kee Inc. is a forward moving and thinking corporation.

Our mission is to provide humanity with the most nutritious and healthful food possible, while at the same time, doing our part in helping to clean up our environment and revitalize America's farmland and waterways.

You will find a more in-depth look into these and other topics on our website, along with descriptions of the nutritional and medicinal applications of our Sacred Clay (a select version of the pyrophyllite clay). Go to www.PyroClay.com.