



WHY NORTH AMERICA IMPORTS FEW FOOD OR FIBER STAPLES

BY HAROLD F. REETZ

Most North Americans are not concerned about their food supply...they don't have to be. Over 97% of the people in the U.S. are free to pursue other jobs and interests, because highly efficient farming systems require only 2 to 3% of the population in production agriculture. We spend a very small portion (about 9%) of our income on food...and the majority of that is for transportation, processing, and packaging. Our ability to help supply the world market for grain and fiber also provides a stable *domestic* food and fiber supply. We don't have to depend on foreign sources for our basic food supply. Although we do depend on foreign sources of special fresh foods and other products, our basic needs are met by domestic production. Few nations in the world share the luxury...and security...of a more-than-adequate food and fiber supply.

Use of commercial fertilizers is responsible for an estimated 40% of food production in the U.S. The contribution of agricultural products to the North American balance of trade is usually taken for granted, but cannot be overlooked. Supplying foreign markets with food and fiber allows us to purchase products from other countries to support our high standard of living.

Agriculture also has the capacity to help substantial-ly reduce our dependence on foreign energy sources. Ethanol from corn and bio-diesel from soybeans can now be efficiently produced to replace fossil fuels and at the same time better protect air quality, especially in concentrated urban areas. Even if subsidies are needed initially to develop the infrastructure for jump-starting the bio-fuel industry, the long-term potential for independence in energy sources and improvements in air quality may be well worth the investment.

Why are we so fortunate? We are blessed with some of the world's largest regions of ideal soils and climate for crop production. But we also have developed a system of research and education through universities and industry that is unequalled in the world. North American farmers and their advisers have access to a wealth of information and technology that keep them on the leading edge of productivity. Scientists in the universities, government agencies, and industry keep the information flowing and the new challenges addressed.

North American farmers and their advisers have unprecedented access to weather and market data, research summaries, and recommendations. The Internet has dramatically changed the flow of information. The latest technology even allows farmers to access the Internet from their tractor cab in the field. The challenge becomes managing and interpreting the information to make better-informed decisions, using the technology to maintain a competitive edge in the global economy.

North American agriculture's success is a product of a unique set of resources:

- vast fertile soil and climate resources ideal for crop production;

- a highly skilled, experienced, and motivated management/workforce rooted in the family farm tradition;
- an unparalleled system of basic research to develop new technology and genetic material;
- a well-developed system of applied research to capture the benefits of new technology into new practices;
- an unmatched Extension education network to get the practices adopted in the field;
- an infrastructure of the input supply, service, and information networks needed to support production;
- an infrastructure to transport raw and processed products to domestic and global markets.



The productivity of modern agriculture in North America helps protect fragile lands in other regions of the world.

The **combination** of these systems is probably the most important factor. Nowhere in the world has it been duplicated. Current economic pressures within government, universities, and industry threaten the stability of this system, and with it the food-fiber-energy security we have come to depend upon. All members of the agricultural system are critical to maintaining that security.

Total volume of production is still the key to our overall balance of trade and domestic food and fiber security. While specialty products and associated markets are increasingly important, commodity production is still the mainstay of our agricultural economy and will be for the foreseeable future. Our success and efficiency in commodity production is dependent upon maintaining, and improving, productivity through proper nutrient management. Higher yields supported by proper fertility will sustain the system. Nutrient management planning has drawn considerable attention in recent years with respect to environmental concerns, but it may be even more important from the standpoint of maintaining productivity.

Nutrient levels on many North American farms are being depleted as a result of several trends:


- Farmers share the concern for the environment and have cut back on nutrient applications...beyond sustainable levels in some cases.
- Due to narrowing profit potential, farmers have cut back on nutrient applications over the past 20 years, allowing crops to draw from the soil nutrient "bank account".
- Crop production levels—and thus nutrient removals—have increased, resulting in an "overdraft" in some fields.

We cannot afford to let the current trends of depletion of soil nutrients continue. At least 40% of our food production is possible only due to use of commercial fertilizers. In fact, use of fertilizer makes it possible for us to continue to use large areas of land for forests, parks, and wildlife areas. Maintaining soil test levels in Illinois corn fields helps protect the rainforests of Brazil and the fragile wildlife habitats of sub-Saharan Africa.

Without fertilizer to maintain productivity on North American farms, more of the world's fragile lands would have to be converted to growing food. Fertilizers increase yield potential of farmland, so that other land can be used for other purposes.

Correcting the trends toward lower soil tests will help farmers and our national food security by:

- Maintaining our low-cost food supply through increasing yields and reduced cost per unit of production.
- Increasing potential to produce low-cost feedstuffs for industrial uses.
- Enhancing competitiveness of agriculturally-derived energy products.
- Ensuring continued independence for our most basic food and fiber needs.

Our future food/fiber/energy security depends on responsible attention to nutrient management today...on all fields. Correcting current trends requires better attention to soil testing and fertilizer application to address deficiencies and avoid excesses. Techniques are being refined, such as site-specific nutrient management systems. Scientifically sound, balanced nutrition in farm fields leads to more balanced diets for animal and human consumption, and supports our national independence in food, fiber, and, perhaps someday, energy. 


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Commercial fertilizers supply nutrients in the inorganic form—the form that plants actually absorb—to boost the growth of plants. Using these nutrients, plants produce the organic materials critical to building soil structure and to supporting the soil organisms essential to nutrient cycling. Thus, inorganic nutrients play a vital role in the biology and health of the soil ecosystem.

Across North America, crops currently remove 77% of the nitrogen supplied in fertilizers, manures, and by legumes. The figure for phosphorus is 95%. Some losses occur, but growers have made progress over the past two or three decades in reducing them. Soil potassium, however, is currently being depleted. Crops remove 43% more potassium than is supplied in fertilizers and recoverable manure.

Agriculture has, and continues to be, oriented toward producing healthy food for all consumers. Managing the Earth's large reserves of inorganic nutrients is imperative to sustain an agriculture that produces healthy food for all. 

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