Reading #1

Why Must We Replace Nutrients Back Into The Soil?

Farmers and ranchers understand the connection between good land stewardship and making a living to produce food and fiber that people depend upon. They know if they take care of the land, it will produce healthy crops for generations to come.

Long ago, when people began to settle in one place to farm, they realized that particular lands were good for growing fruits and vegetables while other land was better suited as pasture land for their animals. There was enough land and water available for those who needed to grow their own food. People would settle in those prime farming areas, especially river fronts and valleys, due to the fertile soil. When an area became overcrowded, people would migrate to other desirable places. People noticed that the manure from their animals made the soil better, and learned that if they rotated their crops, their soil would not become "tired." We now know to use crop rotation to enhance soil fertility and use it to help prevent insect and diseases in crops. Early farmers learned these techniques through trial and error.

As the human population has grown, the amount of available agricultural land has shrunk with the growth of shopping centers and housing developments. New and expanded towns are now covering much of the land that was once used for agriculture production. Farmers and ranchers must produce their crops on the limited land they own or lease, and much of this land has been farmed for generations.

For these reasons farmers must be creative in order to keep their soil fertile so it will continue to produce enough food to meet the demand of a growing human population. Farmers and scientists know that plants need more than just sunlight, water, and carbon dioxide to grow. Plants require the right amount of nutrients. Most of the needed nutrients are in the soil and water, but when a crop is harvested the nutrients contained in the harvest are removed with the crop, and soil nutrients must be replaced if another crop is to grow there.

Let's look at a scenario from the past:

Tractors are not yet invented, and teams of horses or oxen are used to plow the wheat fields to prepare the soil for planting. Wheat is planted and harvested by hand then sent to a small local mill to be made into flour for the people of the community of Wheatland.

Cattle roam in the harvested wheat field and eat what remains. Cattle manure and wheat stubble that are left after harvest is plowed back into the land to return soil nutrients. This land is left alone for at least one year before another crop is planted. The farmer has plenty of land and rotates fields that are planted each year. Perhaps the next time the field is planted it will grow beans or corn.



Reading #1 (continued)

This story gives one example of how agriculture has changed over the years. In the past, farmers produced less product per acre, and were responsible for feeding fewer people. Human populations continue to grow, yet the amount of farm land decreases as towns and cities become larger. This means that today's farmers must use the latest science and technology to grow more food crops on less land for more people than ever before.

For today's agriculture to remain sustainable, nutrients and plant matter that are removed from the soil and sold locally or far away must be returned to the soil in one form or another.