

Fertile Grounds *By Bridget Haworth*

If you spend the time to grow food then likely you want your garden to be well fertilized so that your vegetables or crops are plentiful. It is natural that farmers and gardeners want maximum yields for their efforts. Although it seems logical that more fertilizer will create a bigger and better yield, there are other things to consider.

Both chemical and natural fertilizers provide nitrate to plants. Nitrate is a compound of nitrogen and plants need it to grow and produce protein. Regardless of whether the nitrate is of chemical or natural origins, when too much is present in the soil, problems can arise.

An excess of nitrate can create an imbalance in the soil affecting the health of plants that grow in it. Plants need a variety of nutrients to grow and become healthy food for animals and humans. When plants are over fed nitrate, other important nutrients are no longer available to them. This creates a food supply that is low in nutrition and that affects our health.

Another problem, although rare, is that plants can absorb too much nitrate making them dangerous to consume. When nitrate is consumed by humans or cattle it can turn into nitrite, and nitrite is very poisonous. However, this is called nitrate poisoning even though it is nitrite that is poisonous. Pregnant women and infants are far more at risk of getting ill or even dying from nitrate poisoning. As well, cattle can be affected with digestion issues, miscarriages, still birth and death.

A more common way to get nitrate poisoning is through water that is tainted with nitrate. Rain can wash excess nitrate from fertilized land into waterways and wells that are used for drinking water supplies. Luckily, water treatment facilities clean excess nitrate out of drinking water. Those that use well water should be careful and test their water from time to time.

Another possible way to get nitrate poisoning is when working with crops that are too high in nitrate. When crops are put in an enclosed space such as a silo, several kinds of poisonous gasses can form. These gasses as well as any liquid seeping from the silo are deadly toxic to anyone or thing that breaths or drinks them.

For these scenarios to happen one needs to be over fertilizing with chemicals or spreading manure that has not been properly composted. To avoid nitrate poisoning use only properly composted manure or composted kitchen scraps on your fields and garden. Organic matter that has been properly composted creates healthy soil and no longer has the ability to leach excessive nitrate into waterways or plants.

A healthy soil is alive and teeming with a variety of organisms that work together to nourish plants that ultimately nourish us. Without soil organisms, we would not exist on this planet. The addition of chemical fertilizers (and pesticides) can significantly reduce the population of helpful soil organisms, leaving the soil dead and unproductive. Learning

how to build and maintain top soil with properly cured compost and the rotation of nitrogen fixing plants has is likely the most productive quest of the farmer or gardener.