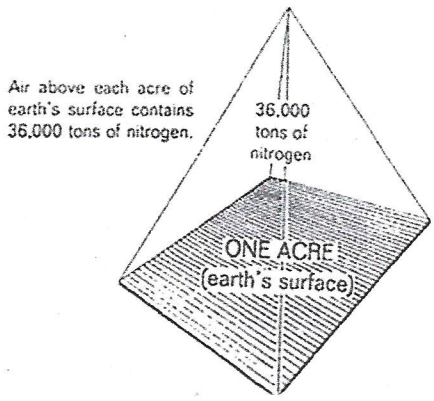
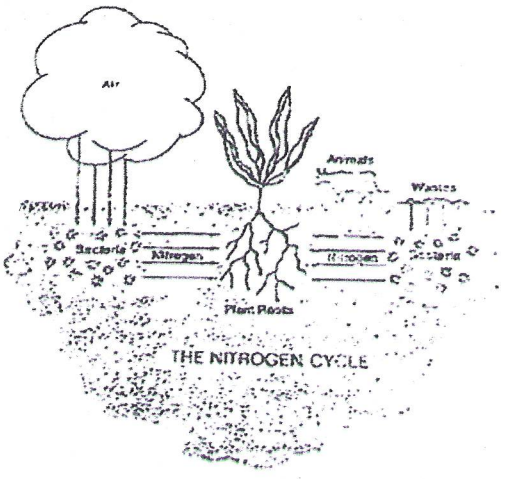
# WHY DO WE BUY SO MUCH NITROGEN?

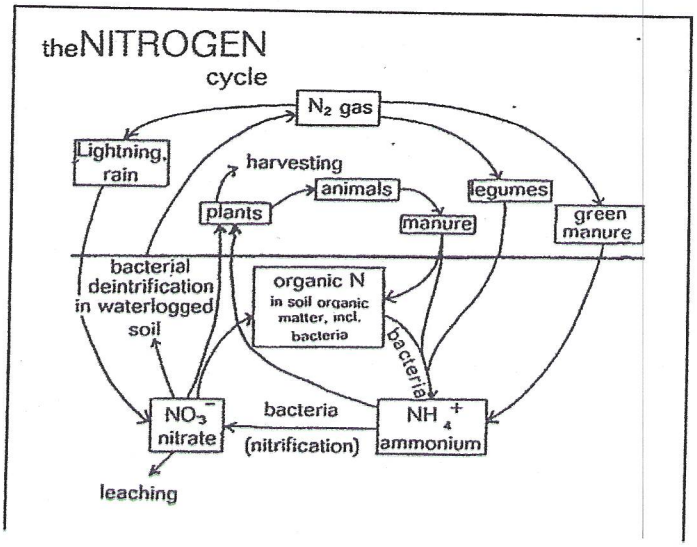
When nature has supplied us "free" nitrogen from the air (78%N), legume crops to supplement our soil, and priceless nitrogen-fixing (azotobacter) bacteria, why do American farmers buy so much nitrogen fertilizer? Let us stop listening to the synthetic fertilizer empire, and learn to work with nature's nitrogen cycle.




The ability to transform the chemically stable gas nitrogen, into organic nitrogen compounds is found in only a few groups of micro-organisms. The most important to agriculture are the bacteria, which includes both aerobic and anaerobic species, most of which are common in the environment and live in soil independency of plants. The best known of these free-living bacteria are the aerobic AZOTOBACTER and the anaerobic CLOSTRIDIUM. These bacteria grow best when there are carbohydrates, which can come from organic matter (manures and crop residues), added to the soil as a source of food. When large quantities of carbohydrates are incorporated into soil, significant increases in combined nitrogen occur.

The best known nitrogen fixing microorganism is RHIZOBIUM, the type of symbiotic bacteria which grows in the root of legumes, such as alfalfa, clover, beans and peas. Neither the legumes nor the bacteria alone can fix nitrogen. Only when they "cooperate" can this be done. The formation of root nodules is amazing. A healthy nodule will have a pink or red color inside because of a red protein called leg hemoglobin, which is similar to the red hemoglobin that carries oxygen in our blood. The RHIZOBIUM bacteria can survive in the soil for many years, waiting to reinfect new legumes, if soil conditions are favorable. Needless to say, anything famers add to their soil which kills soil life cheats them out of about 80lbs. per acre of free nitrogen fertilizer.



# Liquid Concentrate

The liquid concentrate that's being applied on your pasture land is derived from food grade materials and organic substances that make it possible to reduce the amount of nitrates to grow with.

Over the years it has become an alarming environmental issue of using harsh fertilizers and chemicals. It has become damaging to our fresh water ground supply which in turn affects marine life, plant life and human life.

These environmental issues became a target by all regulatory agencies such as EPA, DNR, DPE, and other environmental groups.

This prompted our company to formulate an environmentally friendly product derived from Humic Acid, Fulvic Acid, Enzymes, Amino Acids, Microbes derived from naturally accruing bacterial and fungi coupled with trace mineral elements. It also includes a small amount of NPK.

The use of liquid concentrate allows a natural process to take place.
**(See Figure B)**

This is done by utilizing the nitrogen already in the air.
**(See Figure A)**

This in turn balances and conditions the soil to obtain maximum growing efficiency in all types of conditions.

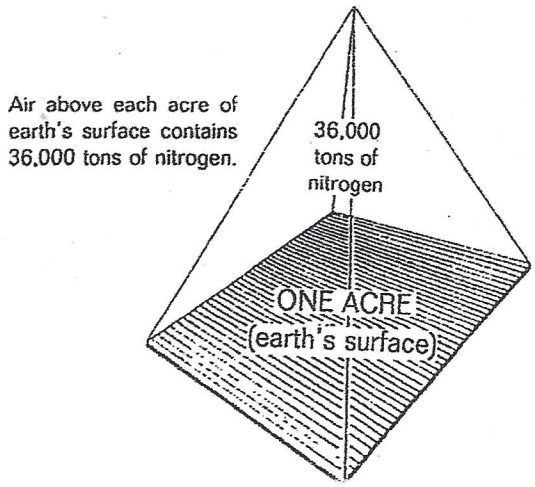
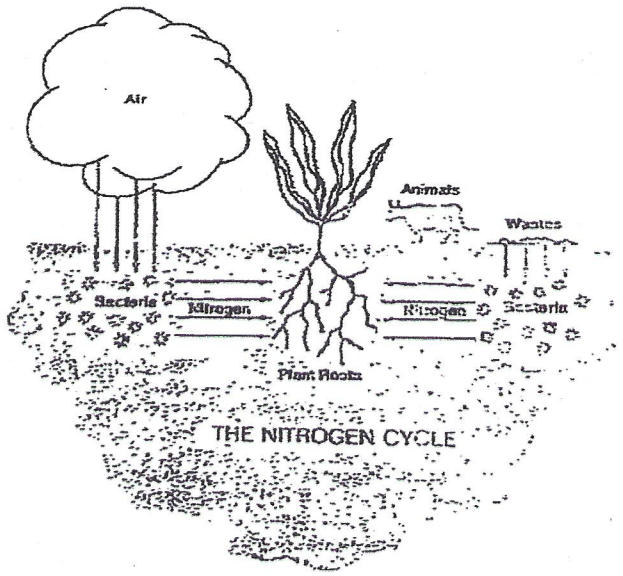



**FIGURE A***

*Picture source from University of Florida fertilizer Handbook.

**FIGURE B***




*Picture source from CASI