

### ***Benefits of Inoculation***

Legumes such as Alfalfa, Clover, Soybeans, Peas, Vetches, & Trefoil require inoculation for proper establishment and plant growth. Inoculation is a live strain of soil bacteria commonly known as rhizobacteria or rhizobium. There are several strains of inoculation and certain plant species require specific strains. Most soils do not contain very many, if any, of these bacteria naturally if a host plant has not been grown recently.

Legumes need their correct strain of soil bacteria-rhizobia to work together to take atmospheric nitrogen found in the air and transform it (or “fix” it) into a plant-available form through a process called *Biological Nitrogen Fixation (BNF)*.

Even though Nitrogen is in the atmosphere, legumes can't use it for their own growth and development *unless it is fixed*. So, neither legumes nor the rhizobia can do the job alone, they need each other to be mutually beneficial or *symbiotic* to each other.

This symbiotic relationship allows the soil bacteria (inoculant) to live on the roots of the legume, forming nodules and consuming carbohydrates from the plant. This provides the plant with nitrogen that the bacteria converts into a plant-usable form.

The number of nodules present on the root system is directly related the amount of nitrogen fixation that can occur- the greater the number of nodules, the greater the potential for nitrogen fixation.

Care should be given not to expose inoculation to heat, sunlight or moisture-they are detrimental to inoculant life since inoculation is a living bacteria. There are expiration dates on inoculants-you should use the inoculant by the expiration date to insure maximum viability of the bacteria.

### ***Benefits of Coatings:***

Seed Coating is the process of adhering a coating onto seeds to increase seed size or weight for easier planting accuracy or to keep inoculation or seed treatments close with the seed during planting.

Seed coating technology offers the benefit of providing a micro-environment for quick and effective seed germination. It improves water absorption and seed coat protection for stronger, healthier plants adding to stand longevity.

Extensive research has demonstrated that with seed coating, the seeding rates for most forages do not need to be higher because coated seed has an increased survivability when comparing coated seed vs uncoated seeds in establishment and growth.