

Application Guide of Hyfer Plus Foliar Fertilizer on Alfalfa

Introduction:

Alfalfa (*Medicago sativa*) is a small seeded perennial flowering plant in the pea family *Fabaceae* cultivated as an important forage crop. Its primary use is as feed for high producing dairy animals because of its high protein content and highly digestible fiber, and secondarily for beef cattle, horses, sheep and goats. It is a leguminous plant which normally lives 4-8 years, but can live more than 20 years depending on variety and climate. The plant grows to a height of up to 1 meter (3ft.) and has a deep root system, stretching from 12-15 meters long. This makes it very resilient, especially to droughts. It has a slowly growing seedling, but after several months of establishment, forms a tough "crown" at the top of the root system, this crown contains many shoot buds that enable the plant to re-grow many times after being harvested. Just like other legumes, Alfalfa contains root nodules with nitrogen fixing bacteria (*Sinorhizobium meliloti*). With its ability to fix nitrogen, Alfalfa is considered as one with the highest protein content among forage crops.

Alfalfa can be sown in spring or fall, and performs best on well drained soils with neutral pH ranging from 6.8-7.5. Usually, a seeding rate of 15-20 kgs./hectare is recommended. A nurse crop is sometimes used, particularly for spring plantings, to reduce weed problems and soil erosion, but can lead to competition for light, water, and nutrients. In most areas, Alfalfa is cut 3 to 4 times a year, but can be harvested up to 12 times per year in some areas. Typical yield is around 8 tons per hectare but higher yields up to 20 tons are recorded depending on the weather condition, management and proper nutrition. Yields vary on different areas, weather, and the crop's stage of maturity when cut. Later cuttings improve yield, but with reduced nutritional content. Alfalfa requires sustained levels of potassium and phosphorus to grow well. Soils low in fertility should be fertilized with organic fertilizer or manure, in many cases, chemical granular fertilizer application is practiced. However, chemical fertilizers may induce soil acidity that may cause phosphorus fixation causing a stunted growth to the plant. Correction of soil pH is very important as this will directly affect nutrient absorption by the root. Acidic soils render phosphorus unavailable to the plant, thus foliar fertilizer application is recommended as an immediate remedy to supplement Macro and Micronutrients.

Advantages of HYFER FOLIAR FERTILIZER:

1. HYFER foliar fertilizer has a well balanced combination of **Macro and Micro Nutrients** (Nitrogen, Phosphorus, Potassium and Calcium Boron, Copper, Iron, Manganese, Magnesium, Molybdenum, Sodium, Sulfur and Zinc), **Humic Acid, Amino acids, vitamins, Hormones** and **Spreader sticker**.
2. Nutrient contents of HYFER foliar fertilizer is readily absorbed by the leaves and immediately translocated into the site of photosynthetic activity, thus making it faster for the plant to manufacture its "own food".
3. With its neutral pH (6.8-7.0), HYFER foliar fertilizer is compatible to be applied in combination with commonly used agricultural pesticides.
4. Hyfer foliar fertilizer can also be used for drip fertilizer application. Unlike other commercially prepared chemical granular fertilizers, Hyfer foliar fertilizer does not cause acidity to the soil. With its neutral pH, it can correct soil acidity/alkalinity throughout time when used regularly.

5. Economical and convenient, HYFER foliar fertilizer can reduce fertilization cost by up to 30% ,reduce labor cost and maintenance cost in dripping systems because it does not clog the nozzles which means regular cleaning of the drip hose can be done at a longer interval.

HYFER foliar fertilizer is formulated based on the plant growth stages, Growth enhancer 22-11-9 (Green) recommended during early plant development, and Bloom booster 8-16-24 (Red), recommended during maturation, flowering and fruiting stages.

DOSAGE AND APPLICATION

Before opening, shake the plastic container very well to homogenized the sedimented particles

As foliar spray:

Dilute HYFER foliar fertilizer at a rate of 1 liter in every 160- 200 liters of clean water and mix thoroughly. Using power sprayer, apply the mixed solution uniformly as a spray unto the leaves and young stems of the plant. Best time of application is early in the morning or late in the afternoon. Spray volume per hectare is 200 liters. Repeat application every 10-15 days until Nutrient deficiency symptoms is corrected.

As drip irrigation:

Dilute HYFER foliar fertilizer at a rate of 500ml in every 200 liters of water and mix thoroughly. Using drip irrigation system, apply the mixed solution directly into the soil 2-3 inches away from the plant. Repeat application every 3-5 days until nutrient deficiency symptoms is corrected.

Notice that soil fertility must be assessed from time to time using soil analysis. Proper timing and application of fertilizers is important. Soil pH must be monitored before application of fertilizer. For economic reasons, 50% of recommended rate of chemical fertilizer + Full recommended rate of HYFER foliar fertilizer is the best combination. However, increasing soil fertility by using organic fertilizer or animal manure + Full Recommended rate of HYFER can also be an alternative. Nitrogen supplementation can be done using chemical granular fertilizer during the early stages of the plant when the root nodules are not yet develop. After root nodules are developed, Nitrogen supplementation into the soil can be reduced or totally stopped.