

Genesis Nursery, Inc.



Legumes have a symbiotic relationship with nodule-forming, nitrogen-fixing bacteria called rhizobia (the symbiont) that transform atmospheric nitrogen into a form usable as a nutrient by the plant (the host). The host, in turn, provides the symbiont with sugar, water, and shelter.

Native legume species nodulate and fix nitrogen only with select species or varieties of rhizobia. Those select rhizobia no longer exist in adequate numbers in construction site soils or agricultural soils. The legume seeds must be inoculated with the appropriate strains of rhizobia to properly nodulate. The inoculants are peat-based powders, with many special strains being custom cultured as needed.

At your request, Genesis will provide the legume seeds by species separate from the rest of the mix and the appropriate rhizobial inoculants for the legumes also packaged separately.

Inoculants are live bacterial cultures and they are perishable. Upon receipt at your shop, they must be refrigerated. They must be kept cool in transit and on the jobsite in a cooler or refrigerator until applied to the seed. An hour on the dash of your truck is fatal to the inoculant!

Native seeding specifications often require the legume seeds to be inoculated just prior to planting. The seed and inoculant must be placed in immediate proximity in the soil for successful “infection”. Powdered inocula are best applied directly to the seed.

Your personnel will be responsible for applying the appropriate amount of inoculant to the legume seeds at the appropriate times.



Applying the powder

Place the legume seeds in an appropriate sized, clean container, such as a wide mouth glass fruit jar, a white plastic dishpan, garbage can, or 5-gallon bucket. Add enough non-chlorinated water or skim milk to barely moisten the seed* Add the premeasured powdered inoculant** to the moist seed and mix thoroughly. Pour the moist seed back and forth between 2 fruit jars, dish pans, etc., until well blended. If the seeds are too moist, add some pulverized, dry topsoil. Allow the inoculated seeds to

dry for 1-3 minutes and blend with the remainder of the seed mix. Overly moist seeds may plug planting equipment. Plant the inoculated seeds within 24 hours, or as required by your project specifications.

The inoculated seed must be protected from hot dry winds and direct sunlight. It is best kept in an air-conditioned trailer or refrigerator until planted.

Inoculated seeds must be covered with soil or mulch immediately. UV light and desiccation are fatal to rhizobia.



Genesis supplies legume inoculants at four times the manufacturer’s recommended rate. This rate of inoculant is adequate for drilling, broadcasting, or hydroseeding.

HYDROSEEDING.

Legume seeds planted by hydroseeding should have 4X (minimum) the recommended inoculant added to the tank mix plus 4X a mycorrhizal seed-box product such as Myco Seedtreat. One-quarter to one-third of the mulch should be applied with the seed and inoculant. The remaining mulch shall be immediately applied in a second pass with the hydroseeder. A small amount of hydroseeding liming agent is sometimes added to adjust the slurry pH when seeding legumes, as low pH kills many rhizobia. Never mix fertilizer or pesticides with the legume inoculant slurry. Complete fertilizers should never be allowed to come in direct contact with inoculated seeds. Inoculated legume slurry should be spread with in one hour of blending.

An alternate, two-step broadcast-hydroseed method has been suggested. Inoculated legumes are kept separate from the remainder of the mix and are dry broadcast. The remainder of the seed and mulch are then applied immediately over the top.

Inoculants are supplied once with the purchase of legume seeds at no additional cost. Replacement inoculants will be billed as materials plus expedited shipping.

To help us better serve your restoration needs, always submit the projects complete material and installation specifications as PDFs with your request for seed quote.

*[2.5 oz liquid / 50 lbs (or 2.7-3.6 ml / lb; 6-8 ml / kg seed)]

**[0.005-0.007 lb / lb, or 7-8 g / kg seed]



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Next to photosynthesis, nitrogen fixation is the second most important plant process in the world. Next to water, available soil nitrogen is the most growth-limiting factor. Properly inoculated legumes are key to both.