



FOR TREES, SHRUBS, FLOWER BEDS and TURF

# DIEHARD™ HUMIC GRANULAR



*“Stimulates root growth naturally”*

DIEHARD™ HUMIC GRANULAR is granular Leonardite that acts as a natural soil and plant growth stimulant. It is a dark brown to black powder with an 85% humic acid content. DIEHARD™ HUMIC GRANULAR is easily assimilated by plants and some of its main functions include improving plant immunity, improving plant metabolism, improving plant root development, improving the supply of plant nutritional elements and increasing the formation of ferments. DIEHARD™ HUMIC GRANULAR promotes the increased accumulation of chlorophyll, sugar, amino acids and more and improves the efficiency of nitrogen utilization, allowing for reduced fertilizer rates. One of the primary actions of DIEHARD™ HUMIC GRANULAR is to increase the plant's ability to withstand the stresses of heat, drought, cold, disease, insect and other types of environmental or cultural pressures. DIEHARD™ HUMIC GRANULAR also increases general plant productivity, in terms of yield, as well as plant stem strength. Within the soil, DIEHARD™ HUMIC GRANULAR stimulates soil microorganisms, promoting Humus formation.

## Advantages Over Conventional Humates

### Full Water Solubility Over a Broad pH Range

Both acid & alkaline soluble - pH <3.5 to pH 4.5  
Solutions will not precipitate in phosphoric acid

### Versatile Product Form

Available as a granular.

### High Rio-available Humic Acid Assay

Proprietary extraction and modification process

maximizes humate content

Made from the highest quality North American

leonardite.

High % humate content provides superior performance on a pound per pound basis.

Low solution viscosity at high humic acid concentrations

provides for easy mixing and pumping

### Excellent Salt Tolerance

Superior compatibility in all types of fertilizer and pesticide formulations

Does not precipitate out of solution like conventional

humates

Effective component in a wide-range of NPK, nutrient or combination fertilizer formulations

### High Ion Exchange Capacity

Better stability under varying soil pH conditions

Better at complexing metals

Makes micronutrients more readily available to plants

### Complexes Micronutrients

Solution complexes to form 10% Zn, 7% Mn, 5% Cu, 5% Fe, 5% Ca, and 4% Mg nutrient solutions.

## Non Plant Food Ingredients

*Derived from Leonardine, 85% Humic Acid*

## Directions For Use

### Foliar Applications

All crops will benefit from foliar applications of humic acids when it fits into the crop management practice. Foliar applications should be made in addition to the soil treatments. Foliar applications should be made at the rate of 3 to 6 ounces of DIEHARD™ HUMIC GRANULAR per acre per treatment. Foliar treatments with Granular Humic are strongly recommended during four growth stages of the crop: immediately before the appearance of buds, before blossoming, after the flowers have fallen, and during ripening. When soil treatments are not possible, foliar treatments may be made every 14 days using 3 ounces of DIEHARD™ HUMIC GRANULAR per acre. It is important to always use DIEHARD™ HUMIC GRANULAR within the concentration parameters listed below.

Maximum Concentration - 1 ounce DIEHARD™ HUMIC GRANULAR per 5.5 gallons of water.

Optimal Concentration - 1 ounce DIEHARD™ HUMIC GRANULAR per 55 gallons of water

Minimum Concentration -1 ounce DIEHARD™ HUMIC GRANULAR per 110 gallons of water

### Additional Notes

When applied together with fertilizers or pesticides, the use of humate increases the efficiency of the companion materials. In most cases, systemic pesticide rates can be reduced by 25% or more when the humate is added to the application. The total annual need for nitrogen can be reduced by 30% or more when the full program of soil treatments using humate are applied to the crop. In all cases, we suggest using personal experience and experimentation to determine the rates of companion products that will provide acceptable performance.

Humates have proven compatible with virtually all companion products except those with a very low pH. In laboratory experiments, no problems have been found other than when companion materials have a pH less than 3.5. However, if there is any doubt about compatibility, a jar test is strongly recommended. To be safe, a jar test is recommended with any material that has a pH less than 4.5.



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Crop	Soil rates per acre per treatment*	Suggestions and Methods
Corn and Sorghum	1.5 to 3 pounds	Apply soil treatment before emergence and again as late as machinery passage allows
Rice – Dryland	1.5 to 3 pounds	Apply soil treatment before emergence and again between joining and early heading
Rice – Lowland	1.5 to 3 pounds	Apply first treatment 7 days before flooding and make foliar treatment at the boot stage
Winter Grains	1.5 to 3 pounds	Apply soil treatment before emergence and again at spring green-up
Spring Grains	1.5 to 3 pounds	Apply soil treatment before emergence and again at the onset of flowering
Beans, field beans, soybeans, peas, and peanuts	1.5 to 3 pounds	Apply soil treatment before emergence and again at the onset of flowering
Cotton	1.5 to 3 pounds	Apply soil treatment before emergence and again at the onset of flowering
Hay and Forages	1.5 to 3 pounds	Apply soil treatment in spring at the beginning of growth and again after each cutting
Pastures	1.5 to 3 pounds	Apply soil treatment in the spring at the beginning of growth, again at midseason and a 3 <sup>rd</sup> treatment before dormancy
Tropical Grasses	1.5 to 3 pounds	Apply soil treatment every 3 months
Potatoes	1.5 to 3 pounds	Apply soil treatment before emergence and again at the hook stage
Sugar Cane	1.5 to 3 pounds	Apply soil treatment before emergence and again at 3 months and 6 months after planting
Root Crops (beets, radishes, carrots, etc)	1.5 to 3 pounds	Apply soil treatment at or within 15 days of planting
Vegetables (tomatoes, okra, eggplant, cucumbers, cauliflower, broccoli, peppers, etc).	1.5 to 3 pounds	Apply soil treatment at planting or before emergence and then every 6 weeks during active production
Leaf Crops (lettuce, parsley, dill, herbs)	1.5 to 2.5 pounds	Apply before emergence and again 6 weeks after emergence
Citrus	3 pounds	Apply soil treatment every month during the active/productive season
Fruits (apples, peaches, pears, apricots, plums, cherries, walnuts, pecans, etc.)	3 pounds	Apply soil treatment 1-2 weeks prior to leaf emergence and again at the beginning of fruiting
Topical Fruits (mangos, papayas, guavas, bananas, pineapples, pistachios, brazil nuts, etc)	3 pounds	Apply soil treatment every month during the active/productive season
Vineyards (Grapes)	1.5 to 3 pounds	Apply soil treatment at leaf emergence and again when fruit is half mature
Berries (strawberries, raspberries, blackberries, blueberries, etc.)	1.5 to 3 pounds	Apply soil treatment at the beginning of growth and again when fruit is half mature
Melons (watermelons, cantaloupes, etc.)	1.5 to 3 pounds	Apply soil treatment at planting or before emergence, and again at the onset of flowering
Landscape Ornamentals	1 oz per 1,000 square feet of beds	Apply soil treatment in spring at green-up or at transplanting and again prior to dormancy. Year-round climates should make soil applications every 3 months.
Flowers	1 ounce per 55 gallons of irrigation water	Apply weekly in irrigation water
Greenhouse plants	1 ounce per 55 gallons of irrigation water	Apply weekly in irrigation water
Potting Mixes	3 ounces per cubic yard of mix	When moistening the dry potting mix, add enough DIEHARD™ HUMATE SP into the water/fertilizer/fungicide solution to deliver 3 ounces of DIEHARD™ HUMATE SP per cubic yard of potting mix.
Hydroseeding	3 to 8 pounds	Once the water is added to the hydroseeding tank, add enough DIEHARD™ HUMATE SP to deliver 3 pounds of DIEHARD™ HUMATE SP per acre. Allow to mix for at least 5 minutes before spraying. In very harsh environments, add up to 8 pounds of DIEHARD™ HUMATE SP per acre in the hydroseeding solution.

## Health, Safety & Storage

**Inhalation** - If dusty conditions exist, wear a dust mask. **Ingestion** - Drink large amounts of water, induce vomiting, and seek medical attention. Store in a cool, dry place. Avoid high temperatures and direct sunlight. Product shelf life is 5+ years. Rev. 122016

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Rev. 082018