



Performance Nutrition is a division of LidoChem, Inc.

# *Nutrol*®



broad spectrum **Fungicide**

water soluble **Fertilizer**

tank **Buffer**

**for Turf and Ornamentals**

*Do Not Distribute in California*

## Nutrol® works three ways....

It's a...

1. Non-toxic and powerful bio-pesticide for the control of Powdery Mildew and other foliar and soil-borne diseases.
2. Highly-concentrated, yet very gentle, water soluble fertilizer.
3. Tank buffer and water conditioner to prevent alkaline hydrolysis.

### **Nutrol® • Bio-Pesticide**

- Nutrol® can be used to control and eradicate powdery mildew on Ornamentals, Roses, and Turfgrass.
- Nutrol® is labeled for the control of several soil-borne and foliar diseases when applied with any of the Prudent® family of fertilizers.
- Nutrol® is the ideal “partner” product for alternation and tank mixing with other EPA registered pesticides.
- Nutrol®, when used in alternation with other labeled fungicides, can prevent the formation of resistant powdery mildew strains.
- Nutrol® is safe for the applicator and the environment.



### **Nutrol® • Plant Nutrient**

- Nutrol® contains over 50%  $P_2O_5$  and 32%  $K_2O$ , making it one of the most concentrated water soluble fertilizers available.
- Nutrol® is also very gentle—it has the lowest salt index of any fertilizer—and will not cause phytotoxicity, even at high concentrations.
- Nutrol® is nitrogen-free, so you can manage nitrogen requirements independently.
- Nutrol® is suitable for foliar, soil and drip irrigation applications.

### **Nutrol® • Tank Buffer**

- Nutrol® is a true tank buffer. Nutrol® can acidify and maintain the pH of tank solutions throughout application.
- Nutrol® buffers solutions to the pH recommended for most pesticides. NOTE: The pH of a 1% aqueous solution of Nutrol® is 4.5 +/- 0.3.
- Nutrol® prevents alkaline hydrolysis, which can negatively impact the performance of commonly used pesticides.
- One-percent (1%) solutions of Nutrol® in the pesticide tank will ensure optimal performance of each component.



*Do NOT use Nutrol® with copper fungicides or other compounds that warn against mixing with low pH products.*





### Guaranteed Analysis

Available Phosphate ( $P_2O_5$ ).....50%  
Soluble Potash ( $K_2O$ ).....32%  
Derived From: Monopotassium phosphate

Nutrol® is compatible with most pesticides and liquid fertilizers. Apply Nutrol® in an alternating tank mix program.

**Tank Mix Compatibility Testing:** Perform a jar test prior to tank mixing to ensure compatibility of this product with other products. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour. If the mixture balls-up, forms flakes, sludge, jells, has oily films, layers or other precipitates, it is not compatible; do not use the tank mix combination.

**NOTE:** Nutrol® acts as a buffer resulting in an acidic spray solution. Do not combine Nutrol® with copper fungicides or with any spray materials that warn against low pH (<5.5) solutions.

In accordance with local crop protection practices, it has been found that the combination of Nutrol with any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers aids in the protection of turf and ornamentals.



# Did you know?

Nutrol® has the lowest Salt Index of any commercial fertilizer!

Nutrol® has a salt index of 8.4. Salt index (S.I.) of a fertilizer is a measure of **the salt concentration that fertilizer induces in the soil solution**. *S.I. does not predict the exact amount of a fertilizer material or formulation that could produce crop injury on a particular soil, but it does allow comparisons of fluid formulations regarding their potential salt effects.*

Nutrol® solutions can be placed near seeds and seedlings with minimal risk of phytotoxicity.

## safe, effective, gentle P and K NUTRITION

100% water-soluble, easy to use

### Mixing Directions

- Add approximately half (1/2) water to tank before gradually adding Nutrol®.
- Agitate thoroughly while adding Nutrol® and the remaining water.
- When tank mixing, add pesticide last.
- When temperatures are cold, allow extra time for this product to completely dissolve.
- Do not use with surfactants when plants are under severe stress conditions, such as heat or water stress. Immediately begin applications after adverse stress conditions subside.
- Mix Nutrol® at 1.9 lbs or less per gallon of water. Consider the pH of the solution when using concentrations greater than 1 to 1.9 lbs per gallon. Do not store high concentration mixes in temperatures less than 60°F.



Nutrol® Application Guidelines for Crop Nutrition		
Ornamentals	Maintenance: Use 1 lb. in 10 gallons of water and spray to wet. Transplants: Use 1-2 lb. of product per 10 gallons and apply approximately 1/2 gallon per transplanted shrub/tree.	Apply at bloom, spring shoot push or shortly after transplant and repeat in 14-21 days. Use any time new growth is pushing or in conjunction with pesticide applications.
Turf Grass Warm Season	2-4 ounces per 1000 square feet (6-11 lb./Acre) per application. If used as a starter, apply 4-6 ounces per 1000 square feet (11-16 lb./Acre). Use a maximum of 3 lb. of product per 10 gallons of spray solution. Use higher rates in chemigation systems where Nutrol® is the primary source of P and K.	Apply every 7 to 14 days throughout the season.  Use as a starter fertilizer during transition periods to cool season grasses.
Turf Grass Cool Season	2-4 oz. per 1000 sq. ft. (6-11 lb./Acre) per application. Use a maximum of 3 lbs of product per 10 gallons of spray solution. Use higher rates in chemigation systems where Nutrol® is the primary source of P and K.	Apply every 7 to 14 days throughout the season.

Nutrol® Powdery Mildew Crop Protection Application Guidelines

Ornamentals

For **control of powdery mildew**, including but not limited to *Microsphaeri alni* and *Erysiphe cichoracearum* on woody and herbaceous ornamentals, use **8 to 40 lb. of Nutrol® per acre**.

**Start spraying in early spring** when conditions become favorable for disease development (i.e. cool, humid, cloudy periods) and **continue spraying on a 7 to 14 day schedule for the entire season**.

**Min:** 8 lb./50 gallons spray solution per acre. .... **Max:** 40 lb./250 gallons spray solution per acre.

DO NOT exceed 16 lb. per 100 gallons of finished spray solution

Roses

For **control of powdery mildew** (*Sphaerotheca pannosa var. rosae*), use **5 to 10 lb. Nutrol® per acre**. **Apply at 5 to 7 day intervals** as needed. Best performance will be achieved with full wetting of leaves without runoff.

**Min:** 5 lb./50 gallons spray solution per acre. .... **Max:** 10 lb./250 gallons spray solution per acre.

DO NOT exceed 8 lb. per 100 gallons of finished spray solution.

Turfgrass

For **control of powdery mildew** (*Erysiphae graminis D.C.*), use **8 to 40 lb. of Nutrol® per acre**. **Start spraying in early spring** when conditions become favorable for disease development (i.e. cool, humid, cloudy periods) and **continue spraying on a 7 to 14 day schedule** for the entire season.

**Min:** 8 lb./50 gallons spray solution per acre. .... **Max:** 40 lb./250 gallons spray solution per acre.

DO NOT exceed 25 lb. per 100 gallons of finished spray solution

Powdery Mildew Crop Protection with Nutrol®

Application rates vary according to the specific volumes of water applied to the crop. Select a water volume and corresponding rate of Nutrol® necessary to thoroughly spray/mist all fruit and foliage surfaces. Always add Nutrol® to the tank mix first, and then add other products after all Nutrol® has been completely solubilized.

Add an approved/compatible “spreader-sticker” to the solution to assure complete spray coverage of plant surfaces.

Nutrol® suppresses existing mildew disease and inhibits further development of new mildew growth on plant tissue. Use alone, in alternating applications or in tank-mix spray programs with other compatible, EPA-approved fungicides. It is rapidly absorbed by the plant and is mobile within the plant tissues, improving the potassium and phosphorous content in the plant. It therefore acts in a dual role as a biocompatible fungicide for plant disease control and as an essential plant food.

Nutrol® will also acidify/buffer your spray tank solution to help reduce alkaline hydrolysis of other compatible, tank-mixed materials.

Best performance is attained by beginning Nutrol® applications prior to the onset of disease, as a preventative disease control program.



Application Rates and Water Volume Guidelines for Powdery Mildew Control with Nutrol®					
Pounds of Nutrol® Needed for Various Water Volumes					
	Water Volume (gallons per acre)				
CROP	50	100	150	200	250
Ornamentals	8-13	13-16	19-38	25	40
Roses	5	6-8	9-10	10	10
Turfgrass	8-13	13-25	19-38	25-40	25-40

### Nutrol® Expanded Efficacy with Product Combination Application Rates

Nutrol® in combination with labeled rates of Prudent®, fertilizers, or ArmorTech® 44, all LidoChem®, Inc. fertilizers, is acceptable with local crop protection practices. The end user must contact a LidoChem, Inc. representative or specialist for specific rates, timing and use recommendations. It has been found that the combination of Nutrol® and any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers aids in the protection of the following crops:

#### Ornamentals and Bedding Plants

Use any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers combined with labeled rates of Nutrol® on ornamentals and bedding plants grown in field nursery, greenhouse, landscaping and conifer nursery situations, for control of diseases caused by *Pythium* and *Phytophthora*.

Use any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers combined with labeled rates of Nutrol® on ornamentals for control of downy mildew and fire blight and for the suppression of bacterial blight caused by certain pathovars of *Xanthomonas campestris*.

Applications must be made prior to disease development and in conjunction with good cultural management practices. Use the higher rate when disease pressure is severe. Do not exceed recommended rates or apply more frequently than at specified intervals or plant injury will occur.

#### Ornamentals

**Foliar applications to plants such as Agalonema, Aphelandra, Azalea, Bougainvillea, Boxwood, Cattelya skinneri, Cissus, Diffenbachia, Hibiscus, Juniper, Leather-leaf Fern, Pittosporum, Philodendron, Pothos, Rhodendron, Spathiphyllum and Taxus medi:** Mix 8-11 pounds of Nutrol® with labeled rates of any Prudent®,

NpHource® 42, or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 7 days.

**Drench applications to plants such as Aphelandra, Azalea, Boxwood, Cissus, Dieffenbachia, Japanese Holly, Juniper, Monterey Pine, Philodendron, Pieris, Pittosporum, Rhododendron, Schefflera, Spathiphyllum and Taxus media:** Mix 8-11 pounds of Nutrol® with labeled rates of any Prudent®, NpHource® 42, or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 7 days.

#### Bedding Plants

**Foliar applications to plants such as Begonia, Pansy, Vinca, Marigold, Zinnia, Petunia, Geranium and Impatiens:** Mix 11 pounds of Nutrol® with labeled rates of any Prudent®, NpHource® 42, or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 7 days.

For Use on Conifers in Nurseries to Prevent *Phytophthora* Root Rot

**Dip treatments to conifers such as Douglas firs, spruce and pines:** Dip in a mix of 8-11 pounds of Nutrol with labeled rates of any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 30 days. Dip immediately before transplanting.

**Foliar applications to conifers such as Douglas firs, spruce and pines:** Mix 8-11 pounds of Nutrol® with labeled rates of any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 30 days. For injection applications, contact a LidoChem, Inc. representative.

## Nutrol® Expanded Efficacy with Product Combination Application Rates

### Downy Mildew Control in Roses

Foliar applications to roses (field, container, landscape and mini varieties) to control Downy mildew (*Peronospora sparsa*): Applications must be made in conjunction with a disease sanitation program to reduce the spread of the disease to uninfected plants.

Mix 8-11 pounds of Nutrol with labeled rates of any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 7 days.

### Fire Blight Suppression

Foliar applications to plants such as ornamental pear, pyracantha and hawthorne: Applications must be made in conjunction with a strict sanitation program to reduce the spread of the disease to uninfected plants.

Mix 8-11 pounds of Nutrol labeled rates of any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary.

Nutrol and Prudent fertilizers, and ArmorTech 44 fertilizers work solely as a preventative treatment. Begin

spray treatments at pre-bloom stage and continue at 7-day intervals until bloom period ends.

Do not exceed one application every 7 days.

For injection applications, contact a LidoChem, Inc. representative.

### Bacterial Blight Suppression

Foliar applications to plants, such as English ivy, schefflera, anthurium, dieffenbachia, spathiphyllum, syngonium and ficus, for the suppression of the *Xanthomonas campestris pathovars hederæ, diffenbachiae, syngonii and fici*: Applications must be made in conjunction with a disease sanitation program to reduce the spread of the disease to uninfected plants.

Mix 8-11 pounds of Nutrol® with labeled rates of any Prudent®, NpHource® 42 or ArmorTech® 44 fertilizers per 100 gallons of water and apply as necessary, but do not exceed one application every 7 days.

Refer to compatibility statements concerning use of copper or other compounds.



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**PERFORMANCE**  
NUTRITION®

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