

# HOPS

## General Information

### Crop Protection with Nutrol

Nutrol is a soluble crystalline product to be mixed with water. Application rates vary according to the specific volumes of water applied to the crop. When the crop can be completely covered with the spray solution, use the lower range of spray volumes. Surfactant use and spray efficiency will impact coverage. Select a water volume and corresponding rate of Nutrol necessary to thoroughly spray/mist all fruit and foliage surfaces. Gradually add the specific amount of product to a half-filled sprayer tank and mix, then add the balance of required water while continuing to agitate the solution. Always add Nutrol to the tank mix first, 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. Plant disease pressure can increase when plant surfaces are frequently wet and temperatures are warm. Under these severe disease conditions, use the higher spray rate and apply at the shorter spray interval.

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 phosphorus 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. DO NOT MIX with copper fungicides or with any spray materials that warn against low pH (<5.5) applications.

### Resistant Powdery Mildew Fungus Strains May Be Present!

If treatment is not effective following use of conventional fungicides as instructed, a resistant strain of the fungus may be present. If this occurs, then fungicides such as

benzimidazole, thiophanate or DMI type will not give effective control. When resistant fungus strains are present, give serious consideration to the use of Nutrol for effective mildew control and crop protection. Nutrol controls mildew strains that are resistant to other fungicides and is a valuable “resistance management” tool. The pH of a 1% aqueous solution of Nutrol is  $4.5 \pm 0.3$ .

## Product Description

Nutrol is manufactured specifically as a low salt, water soluble, foliar and special application fungicide and plant nutrient. Its use is suggested as a supplement to a grower’s standard practice fungicide and fertilizer programs. The target is reduced pesticide use and enhanced yield and quality.

Nutrol is a highly soluble, low salt index formulation developed to supplement standard fertility practices by providing a highly available source of phosphorus and potassium.

Research has shown that foliar-applied nutrients, in a pure and soluble form, are absorbed more efficiently by foliage than are those supplied in the soil. Nutrient translocation to all parts of the plant is generally more rapid when nutrients are applied foliarly. Foliar fertilization with Nutrol is intended as a supplement to a regular fertilization program and will not, by itself, provide all the nutrients normally required by agricultural crops.

A good tissue testing program may be helpful to monitor and maintain optimum plant growth and development. Adverse conditions such as moisture, stress, weather, salts, soil type, etc., may induce nutrient deficiency symptoms. When applied as directed, Nutrol application is a means of obtaining a quick response to needed nutrients.

- Salt Index: 8.4 (0.097 per 1% of plant nutrient)

- pH (1% aqueous solution):  $4.5 \pm 0.3$

For each crop, see the following table for additional rates per water volume.

## Limitations, Restrictions, and Exceptions

### GRAPES

Use a maximum of 3 lbs of product per 10 gallons of spray solution.

Apply starting at the 1-2 inch (3 to 5 cm) shoot stage through veraison every 2 to 4 weeks.

Method

[Spray](#)

Rates

[field\\_rates 0](#)

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Restricted Entry Interval

4 hours

Timings

[At early season training and continue through end of bloom period as often as every 7 days.](#)