

# SOIL CALCIUM



WITH GMS

## SOIL MAINTENANCE

Before expecting the best returns from each plant food dollar invested, the soil should be adequately supplied with available calcium because limestone can correct soil drainage and chemical and physical property problems. Always use limestone sources that are high in calcium and low in magnesium.

### Some benefits of higher calcium levels in soil:

- Helps correct soil acidity
- Helps improve soil structure
- Helps neutralize the harmful or toxic effects of excess soluble salts of magnesium, sodium, and potassium
- Helps provide proper conditions for beneficial bacterial and earthworm growth
- Helps regulate nutrient absorption into plants

It is best to broadcast fine high calcium lime, working it into the soil before transplanting young vines, but it can also be bulk spread in established vine rows. Water and weathering should move the limestone-calcium-into the root zone and the soil profile.

Soil moisture, temperature, density, and bacterial activity can all have an effect on soil pH. At Growers, we put more emphasis on the calcium and magnesium levels in the soil than on the pH readings. A proper Ca to Mg ratio leads to a balanced soil which releases all nutrients to the growing plants on an "as needed" basis.

Growers maintains its own soil testing lab as a no cost service to customers.



## GROWERS TARGET FERTILITY



*"The placement of elements close to the plant to take advantage of the efficiencies of reduced time and distance."*

### THE 3 MAIN POINTS OF THE PROGRAM

- 1 Provide a good growing medium by ensuring adequate calcium in the soil.
- 2 Supply necessary nutrients to the plant by applying balanced high quality soluble plant nutrients at the correct time.
- 3 Put in comparison plots and yield check to verify profitable results.

Milan  Ohio

ESTD **GROWERS MINERAL** 1955

THE FARMERS SOLUTION

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**OUR RESEARCH IS YOUR PROFIT**

**800-437-4769 or 419-499-2508**

[www.GrowersMineral.com](http://www.GrowersMineral.com)

Your local Growers Representative is:



THE GROWERS PROGRAM

# GRAPES



Since 1955, Growers Mineral Solutions has helped farmers increase profits by lowering overall costs while raising more and higher quality crops. This is accomplished by creating a superior rooting media, and stimulating plants with smaller amounts of balanced nutrition (GMS) at stress points during the plant's life. This is a farming philosophy known as "The Growers Program."

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## MANAGEMENT TOOL

Growers Mineral Solutions and the Growers Program are unique in that they are very flexible and thus can be used as very effective management tools. During unfavorable weather periods or conditions (too wet or dry, hot or cold, etc.), Growers can provide timely nutrition for plant vitality, survival or production. Under favorable conditions, GMS can help maximize crop yields and quality. Some results grape growers have experienced from foliar feeding GMS are increased tonnage, higher sugar content, faster growth, earlier maturity, larger leaves, and better cane ripening.



## YOUNG VINE GROWTH

The purity of raw materials in Growers Mineral Solutions and its nutrient balance is well suited for stimulating young plants. New vines are to be set with a transplanting solution of 1 gallon of GMS diluted in 100 gallons of water. This mixture can be used as a root dip, or eight ounces can be applied directly to the roots. The roots will be needing some air, so the soil should be pulled around without packing, especially when wet. When new vines are set is an ideal time to mix liberal amounts of finely ground high calcium limestone directly into the slit or hole below the young vines at a rate of four to five pounds per vine. One or two foliar spray applications of GMS during the first season would also be beneficial.

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## FOLIAR FEEDING GRAPES

WITH GMS

### RECOMMENDATIONS

At bud swell or bud break, spray grape vines at the rate of 1 to 2 gallons per acre with Growers Mineral Solutions. (All living above ground plant parts: twigs, branches, buds, fruits, flowers, stems, etc. can absorb nutrients. *An Acres USA Primer*, p. 255.)

### Foliar spray should also occur

- Just before blossom, when shoots are 1" to 5" long, spray 2 to 3 gallons GMS per acre
- Two weeks after blossom, spray 2 to 3 gallons GMS per acre
- During berry formation at 1/3 to 1/2 berry size, an additional 2 to 3 gallons GMS per acre has shown increased sugar and has hastened ripening
- After harvest, for winter health and a head start on the next season's crop, spray 2 to 3 gallons GMS per acre

### FINE TUNING

This is the basic recommended approach, but, depending on the management style of the producer, various others can and are being used. Some Growers users successfully adapt these to conform to their own normal spraying schedules. For instance, some are profitably applying GMS at one gallon per acre six or eight times during the growing season. Some words of caution, however, if using with other spray materials: Always test the compatibility of Growers with the other material before mixing.

When grape vines are under stress-drought, too much rain, hail, etc.-it is a good time to foliar feed. GMS foliar spraying should be done in the early morning while dew is still present, late afternoon and evening, or on foggy, damp, overcast days. High humidity is the key to efficient nutrient absorption by all plants, including grapes, because they cannot absorb minerals through their foliage during the heat of the day or in bright sunlight. GMS is not corrosive and foliar sprays can be applied by any ground or air spray equipment.

### NUTRIENT DEFICIENCIES

Poor or unusual growth patterns, such as yellowing in grape vines, blossom drop, etc., are generally caused by nutrient deficiencies and can usually be corrected by one or more of the minerals found in Growers Mineral Solutions. GMS may not, however, correct all symptoms that appear to be nutrient deficiencies because they may actually be the result of poor drainage, poor soil chemical properties, or poor soil physical properties.

### WATER CONSIDERATIONS

Anytime GMS is foliar sprayed, if water is to be used for dilution its quality has a very big impact in the effectiveness of GMS. When diluting GMS with water, consult with the GMS sales representative.