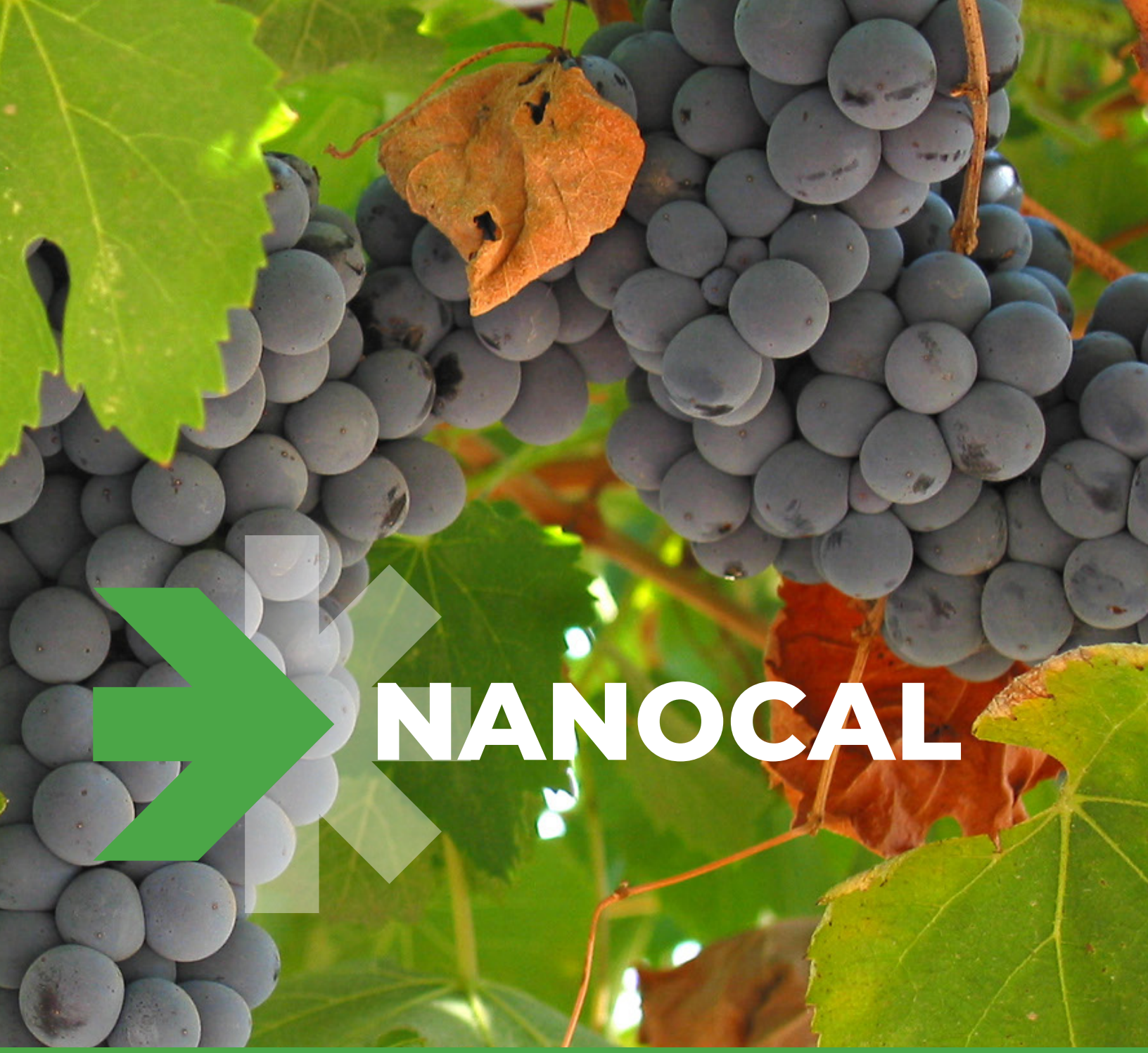


NANOCAL

Let’s grow greener

Rovensa Next

ENCOURAGE® NANOCAL®

ENCOURAGE® NANOCAL®: Micronized Calcium for Better Quality Crops

Growers have always known the value of calcium in producing a healthy, high value crop. However, the challenge has been how to deliver sufficient amounts of readily available calcium to crops at the right time in their development. Maintaining calcium levels in the soil through a comprehensive fertility program is important but may not provide the level of available calcium required for a developing crop. A crop's demand for available calcium will spike to a high level at the onset of fruit, tuber, nut or bulb formation.

The usual approach had been to apply gypsum or other sources of calcium to the soil far in advance of the crop in the hope the calcium will break down into small enough particles so it can be taken up by the plant. Alternatively, or in conjunction with a soil application, liquid calcium is applied to the foliage in the hope that it will move into the plant to provide enough calcium to meet the high demand of a developing crop.

AVAILABILITY IS THE CHALLENGE

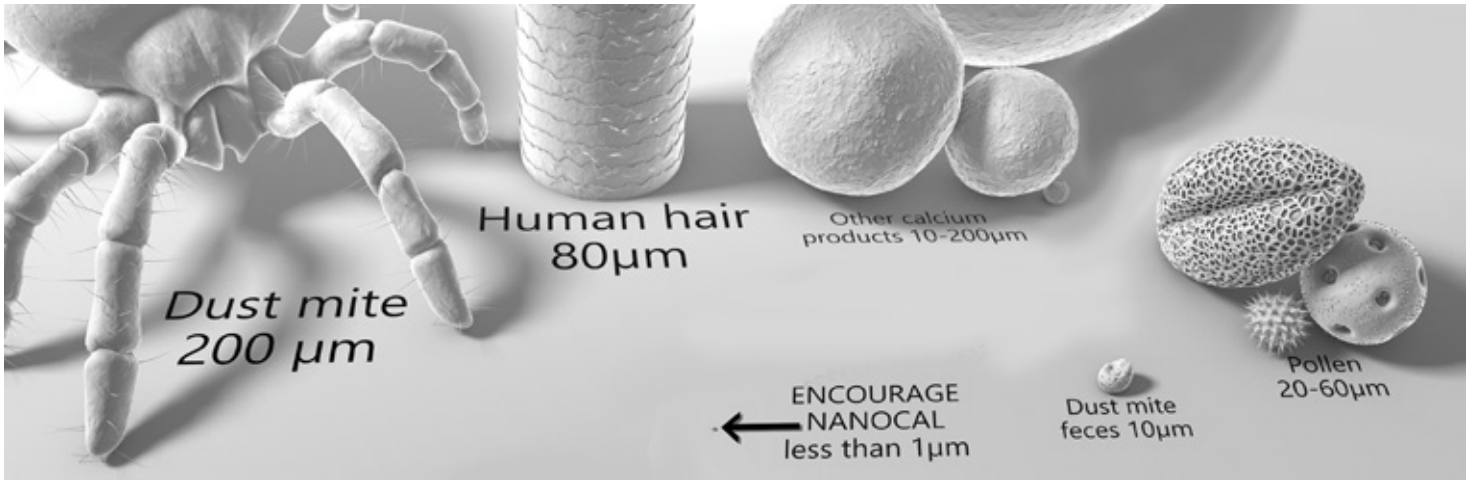
However, most soil and foliar applications are very inefficient in providing readily available calcium at the critical time of crop development to avoid calcium deficiency problems like hollow heart in potatoes, blossom end rot in tomatoes, and poor storability in general.

Gypsum, limestone and other soil applications can help remediate low calcium levels but because mineralization may not have occurred prior to the spike in demand from the plant a sufficient amount of calcium may not be available during this critical time to prevent poor physiological development.

Foliar-applied calcium does not move far from the application site on the leaves. It can help in supplying calcium to the skin of developing above-ground fruit and the nutrition of the above ground portion of the plant but it will not translocate to meet the demand of below-ground crops like potatoes, sweet potatoes or onions.

The movement of calcium is primarily through the plant's transpiration system. For the plant to grow a steady supply of calcium, along with water, must be supplied by the root system. So a lack of available calcium particularly during the high-demand period of fruit set, tuber formation or pod fill will negatively impact not only fruit development but also the overall health and growth of the plant.

The only way to prevent insufficient calcium in the developing produce is to increase the concentration of soluble calcium in the soil immediately surrounding the crop's root system.



ENCOURAGE NANOCAL

A NEW SOLUTION

ENCOURAGE NANOCAL is a liquid, soil-applied product with calcium particles milled to less than 1 micron in size. This micronized particle size addresses some of the shortcomings of larger sized calcium particles found in other products.

First, its smaller size floods the soil surrounding the roots with readily available calcium particles compared to the same volume of product with calcium particles sized from 10-80 microns in size. To illustrate, think of the number of marbles in a five-gallon bucket versus the number of tennis balls in the same size bucket. More calcium particles in the soil means more will come in contact with roots and underground tubers/bulbs and enter the plant.

Second, the less than 1-micron size is small enough to be immediately taken up by plants. **There is no need to wait for mineralization or weathering of a large size particle to occur before it can be utilized by the plant.**

NANOCAL is formulated with patent-pending TransXylem® technology. This technology facilitates easy movement of material upward from the roots to the fruit and other parts of the plant. The translocation up the xylem ensures calcium is delivered in the most efficient and effective way to benefit all the portions of the plant.

An additional benefit of ENCOURAGE NANOCAL is the improvement of soil structure. After disassociation from the calcium carbonate molecule in the soil, the positively charged calcium ions, Ca++, bond to the negatively-charged clay particles. This bonding causes flocculation of the soil particles and opens up pore spaces for better water and oxygen penetration and reduced resistance to root growth.

BEFORE **AFTER**

THE RIGHT AMOUNT AT THE RIGHT TIME

NANOCAL is formulated to be applied shortly before blossom in vine fruits and vegetables, ground fruits and grapes, petal fall in tree fruits, and hook initiation in potatoes so the sub-micron particles are available for the developing crop. It is not meant for remediating calcium levels in the soil. This precise application timing, coupled with the high concentration of NANOCAL's calcium particles, takes the guess work out of whether there is enough calcium available when demand skyrockets during the critical period of cell division in the crop's development.

APPLICATION DIRECTIONS

A soil application of ENCOURAGE NANOCAL is the preferred method of treatment. This will ensure it gets into the tuber or fruit at the time it is needed the most for cell division and growth. Foliar applications are less efficient and will result in less calcium entering the plant. However, if a foliar application is made the addition of TransXylem technology to the NANOCAL formulation will maximize the quantity of calcium that penetrates the leaf and is translocated within the plant compared to other calcium products that have larger sized calcium particles and lack the TransXylem technology.

ENCOURAGE NANOCAL can be tank mixed with other nutrient, plant growth regulators or crop protection products. It can be applied through pivot, overhead, or drip irrigation systems or by ground rig applications.

TIMING:
- Stone and pome fruit: Apply at petal fall.
- Potatoes: Apply 1 – 3 weeks prior to hook.
- Indeterminant crops such as tomatoes, peppers, melons and berries: Apply at bloom with subsequent applications every 14 to 21 days for continuous crop development.
- Other crops: Apply just before fruit/vegetable initiation

RATES:
- Apply 1 – 8 pints of ENCOURAGE NANOCAL per acre.
- On sandy soils multiple applications at lower rates are recommended.

CALCIUM INCREASES BY CROP

Field trial results show NANOCAL boosts calcium levels in a wide variety of crops.

All applications were soil applied at 1 qt/acre except where noted.

63% ↑
PURPLE ONIONS
Washington

31% ↑
PURPLE ONIONS
Washington

81% ↑ **First set**
54% ↑ **Second set**
Specific Gravity
1.088 to 1.09
TETON RUSSET POTATO
Idaho

21% ↑
YELLOW CORN
Iowa

61% ↑ **First set**
55% ↑ **Second set**
Specific Gravity
1.093 to 1.099
CLEARWATER RUSSET POTATO
Heavy soil
Idaho

4% ↑ **First set**
18% ↑ **Second set**
SHEPODY RUSSET POTATOES
Sandy soil
Idaho

28% ↑
KIDNEY BEANS
Washington

57% ↑
SUGAR BEETS
Michigan

5% ↑
SUGAR BEETS
Michigan

63% ↑ **First set**
9% ↑ **Second set**
WHITE POTATOES
North Dakota

16% ↑ **First set**
23% ↑ **Second set**
WHITE POTATOES
New Jersey

600% ↑
Specific Gravity
1.031 to 1.077
ROUND WHITE POTATOES
Heavy Loam soil
Maine

19% ↑ **First set**
22% ↑ **Second set**
RED POTATOES
Minnesota

15% ↑
YELLOW ONIONS
Utah

38% ↑
PEANUTS: Nut Only
Georgia

24% ↑
SOYBEANS
Nebraska

50% ↑
PROCESSING TOMATOES
2 qts + 1 qt TRANSFORMER
California

2% ↑
BLUEBERRIES
Michigan

30% ↑
THOMSON SEEDLESS GRAPES
Foliar applied
California

For more information contact your local Rovensa Next representative or visit rovensanext-na.com

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