



PRE-BLOOM CA, B & ZN IN TABLE & WINE GRAPES

Pre-Bloom Nutrition

For years, we have heard about the importance of including Zinc (Zn) in our pre-bloom foliar nutritional sprays for table and wine grapes. So much so, that we almost universally include it without even thinking about it. Pre-bloom Zn is key for fruit set. In conjunction with Zn, Calcium and Boron also play critical roles in pre-bloom nutrition. Here's a quick synopsis of what each element does for the plant, and why it is a necessary component in pre-bloom nutrition.



CALCIUM

- Calcium (Ca) is the key component in cell walls, maintaining membrane structure and has a direct influence on the regulation of enzyme systems, phyto-hormone activities and nutritional uptake. It has a specific influence on fruit quality, color and aroma. Low Ca concentrations in fruit lead to earlier maturity and softer skins in direct correlation to fruit quality in table, raisin and wine grapes. Nearly 40% of a vine's Ca absorption takes place between leaf emergence and fruit set.



BORON

- Boron (B) is involved in various enzyme systems and carbohydrate metabolism. It also plays a critical role in pollen tube formation and fruit set. Low B concentrations can lead to shot berry, uneven ripening and, in the case of wine grapes, seedless berries. Due to its high solubility, foliar applications of B are very effective in correcting deficiencies. Typically, 90% of the applied B is taken up by the plant within 24 hours. Pre-bloom foliar applications are the best way to ensure pollination and fruit set problems are avoided.



ZINC

- Zinc (Zn) is a key component in the development and function of growth regulators (i.e. auxins) that influence internode elongation, rachis stretch, and bunch formation. Deficiencies can lead to poor fruit set, stunted shoots, and loose clusters with undersized, irregularly shaped fruit that ripens unevenly.

Application Timing & Needs

Before you think about making a nutrient application, it's always important to get some history and a current tissue analysis to determine the rate and type of nutrient you need to recommend. Once you've determined need, the two final critical factors are when and with what.

The when is simple – the earlier, the better. If you can get your pre-bloom applied just as the infant cluster is emerging from the shoot, you will ensure the nutrients have time to absorb and translocate to the structures as they are forming. Including Megafol® and eXploit® or Utilize® PK in your spray mix will help kick-start the vines' metabolism and help drive nutrients to the fruiting structures. A minimum of two pre-bloom (cluster emergence and 7 days pre-bloom) foliar nutrient applications in varieties that don't have historical set issues is recommended, and three applications (cluster emergence, 7 days pre-bloom, and bloom) to varieties that struggle with set, cluster development, and berry formation. These are tank mixed with the grower's powdery mildew applications.



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Pre-Bloom Program

A simple, effective pre-bloom program is Brexil® CBZ + eXploit (or Utilize PK) + Megafol. You get a great ratio of fully chelated Ca (5%), B (1%) and Zn (3%) with Brexil CBZ, plus the metabolic benefits of Megafol and eXploit working together to maximize nutrient uptake. If you have adequate B, another option is tank mixing Brexil Zn (10%) + Brexil Ca (15%) + eXploit (or Utilize PK) + Megafol. Brexil Ca has a very small amount of B (0.5%) but not enough to influence tissue levels. Helena has a great number of tools available to help our growers maximize yield and quality. The key is timing, rates and superior inputs.

Product	Description
BREXIL CBZ	A foliar nutritional that provides a better bloom set by delivering a safe, balanced source of calcium, boron and zinc. Because it contains an LPCA complexing agent, Brexil CBZ provides maximum foliar uptake and excellent plant safety.
UTILIZE PK	A 0-3-2 foliar nutrient system that boosts plant performance during the vital reproductive stage. Utilize PK gives your crop extra energy during critical growth stages. It achieves this by increasing production of polyamines, which are essential to the reproductive process. Utilize PK also increases chlorophyll production and enhances photosynthesis, which boosts crop energy.
EXPLOIT	A foliar-applied plant physiological activator that strengthens flower structures in many crops. It does this primarily through the increased production of polyamines in plants. Tests have shown that this activity can increase flowering and fruit set, which results in higher yields and improved quality.
MEGAFOL	Megafol is a foliar nutrient supplement (3-0-8) that strengthens crop vitality and helps crops recover more quickly from growing stresses. It contains a precision nutrient solution of nitrogen and potassium containing plant extracts in a highly soluble form.
DYNE-AMIC®	Improve the effectiveness of your spray applications with an adjuvant proven to maximize performance. Dyne-Amic is a flexible, easy-to-use adjuvant that spreads like a surfactant and penetrates better than crop-oil concentrates to deliver reliable results.



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