



QMIN[®] + Q-Bio[®] for ORGANIC crops
complexed nutrients

Advanced specialty plant nutrition



QMIN & Q-Bio complexed nutrients

In an environment of diminishing resources, increasing consumption and rising crop values, effective crop nutrition has never been so critical. These conditions demand economically sustainable and agronomically sound solutions that do not adversely affect the environment.

The uptake of plant nutrients from foliar or soil application is commonly more efficient when the nutrient ions are complexed with polysaccharides.

Complexed nutrients can more readily pass through the cuticle and stomata when applied foliarly. Complexation also protects the nutrient ion from fixation when applied through soil.

QMIN & Q-Bio complexed nutrients utilize a proprietary manufacturing technology whereby a blend of polysaccharides is reacted with specific ionized nutrients, resulting in complexed compounds which help improve nutrient uptake and translocation within the plant.

QMIN & Q-Bio products have been designed to optimize the following important areas when applied as recommended:

- Increase the nutrient permeation through the leaf waxy cuticle and stomata
- Improve the uptake of complexed nutrients into leaf tissue, and translocation of the polysaccharide-nutrient complex to sites of active metabolism in the plant
- Minimize formation of insoluble nutrient precipitates in soil and tank mix
- Minimize phytotoxicity risk

In testing by university researchers, agronomists and crop consultants, polysaccharide complexed nutrients have proven to have safe and rapid uptake on a wide variety of crops, including almonds, apples, pistachios, corn, broccoli, lettuce, spinach, tomatoes, melons, strawberries, grapes, blueberries, carrots, cherries, citrus, cotton, onions, peppers and potatoes. In addition, QMIN & Q-Bio products have high compatibility with most fertilizers and pesticides in foliar and soil applications.

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QMIN & Q-Bio Technology – plant nutrition innovation that drives customer success

QMIN & Q-Bio products are part of the plant nutrition portfolio from QualiTech, Inc. Established in 1967, QualiTech is a technology-based problem-solver – creating and delivering innovation that makes a measurable and positive impact on customer success while promoting the health and wellbeing of people, plants and animals. Through scientific research, product innovation and exceptional service, QualiTech works in collaboration with its customers to make ideas that work.

QMIN & Q-Bio complexed nutrients meet crop nutrient requirements and provide you with great flexibility in your operation:

- Effective uptake and translocation across a wide range of high-value crops including fruits, nuts and vegetables
- Compatible with a wide variety of fertilizers and crop production products, thanks to QMIN & Q-Bio's unique polysaccharide complexation technology
- Stability in low pH tank mixes and acid fertilizers allows great flexibility in management practices and fertility programs

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Complexation: The most effective solution for nutrient absorption and translocation

Foliar feeding is challenging in practice. This is primarily due to a semi-impenetrable barrier on the outside of leaves called the cuticle, a waxy substance produced by epidermal cells which limits the absorption of positively charged particles. Because of their neutral nature, QMIN & Q-Bio products can circumvent this barrier and pass through the cuticle and stomatal openings.



Safety

There are many potential factors that increase the risk of phytotoxicity. Accumulation of overlapping chemical residues, adverse weather conditions and inaccurate application can all cause phytotoxicity. Some foliar nutrients can cause cellular damage to leaves (phytotoxicity) because they possess high salt indexes that rupture plant cells they contact by increasing the osmotic pressure. Because of their complexed and neutral nature, QMIN & Q-Bio products can minimize this phytotoxicity factor.

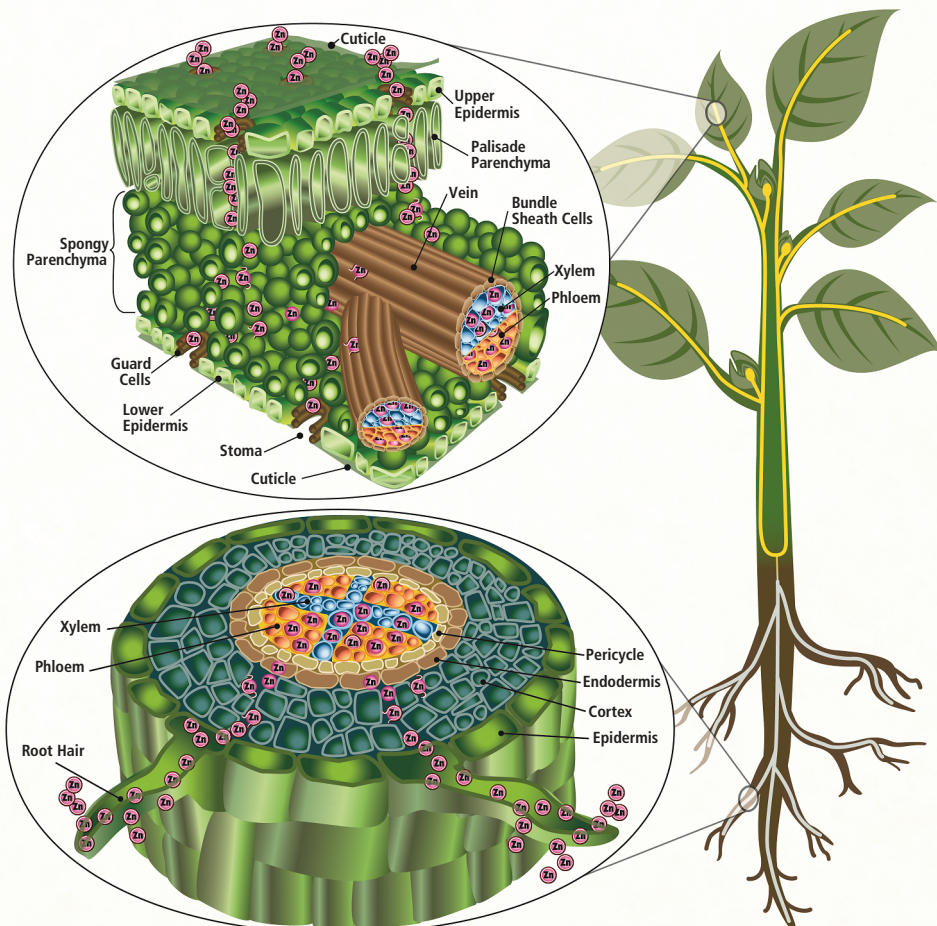
Compatibility

Compatibility in a tank mix with other fertilizers and agricultural chemicals allows for the efficient storage, shipment and use of plant nutrients. Compatible mixes, when prepared as directed, stay in solution for a useful length of time, do not produce violent or volatile reactions, do not raise the temperature at which the solution forms a precipitate, nor change the new solution in any other deleterious way.

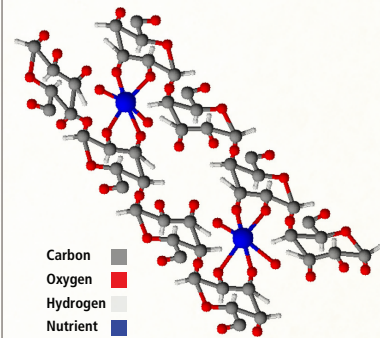
QMIN & Q-Bio products offer a broad range of compatibility, both when mixed with other polysaccharide complexes and when mixed with common primary nutrient fertilizers. Many QMIN & Q-Bio products have unique compatibility in acidic solutions.

QMIN & Q-BIO'S POLYSACCHARIDE COMPLEXES WORK WITH THE PLANTS' NATURAL PHYSIOLOGICAL PROCESSES TO INCREASE UPTAKE AND TRANSLOCATION

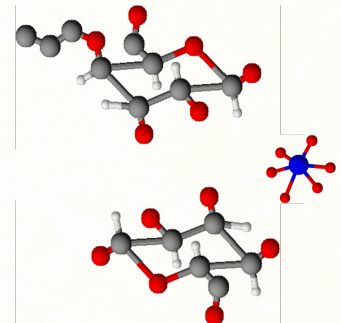
QMIN & Q-Bio complexed nutrients can more readily pass into the plant through the cuticle and stomatal openings, and move into the leaf mesophyll by diffusion. Subsequently they are translocated to points of metabolic activity in the plant.



1) Illustration below depicts QMIN/Q-Bio polysaccharide complexed nutrients.



2) Once absorbed, the complexed nutrients in QMIN/Q-Bio are translocated within the physiological pathways of the plant. The plant begins to break down the complex to release the nutrients where they are needed.



3) Once fully released, the nutrients are utilized by the plant to perform specific functions.



All QMIN & Q-Bio products utilize QualiTech's innovative polysaccharide complexation technology to improve uptake and translocation for optimum results.

DISCOVER MORE ABOUT THE BENEFITS OF QMIN & Q-BIO COMPLEXED NUTRIENTS

