

Foam Substrates, Hydroponic Fertilizer and You

Here at Oasis Grower Solutions, we know it's common for people to say growers shouldn't apply nutrients until seeds germinate. But you won't hear that from us.

Browse any of the Product Usage sheets for our engineered foam substrates and you'll find instructions to always fertilize with your initial saturation and seeding.

Ideally, we'd like you to make that first nutrient application with our OASIS® Hydroponic Fertilizer 16-4-17. But what we'd like even more is for you to experience the difference that optimal nutrients from day 1 can make.

Research shows that starting nutrient application at seeding can increase lettuce fresh weights up to 200% by day 14. OASIS® Hydroponic Fertilizer 16-4-17 was developed to help you achieve similar results.



Collaboration + Inspiration = Innovation

A little more than a decade ago, Oasis Grower Solutions and JR Peters – Jack's Fertilizers collaborated on a project involving greenhouse rice seedlings and foam substrates in Japan. Spurred by that experience, the team began exploring nutrient targets for hydroponic crops — specifically leafy greens and herbs.



Dr. Cari Peters

Formulator & Managing Partner at JR Peters - Jack's Fertilizers

Vijay Rapaka, Ph.D., our Director of Global Grower Operations and Research, was our Corporate Grower Research Manager and lead research scientist then. He recalls identifying a gap in nutrient requirements between seeding and germination.

Dr. Rapaka notes that early hydroponic nutrient recommendations were based on field production and the idea that nutrient reserves in seed should sustain early growth. "However, with hydroponic lettuce farming, you are on the clock," he says. "The most important resources are time and space. You want to maximize the production efficiency and reduce crop time."

Together with Cari Peters, Ph.D., Formulator and Managing Partner at JR Peters - Jack's Fertilizers, Dr. Rapaka focused on nutrient timing and concentrations.

Dr. Peters shares, “We embarked on a series of trials, formulating solutions with varying nutrient ratios and feed rates.” Would supplying a nutrient solution from day 1 enhance the development of newly germinated plants? If so, what would optimal concentrations be?

Several discoveries followed. “Through our experimentation we found that lettuce seedlings benefit the most by having nutrients readily available when the radicle emerges right after the seed germinates,” Dr. Rapaka says. “The most surprising thing is that seedlings benefit the best with relatively high nutrient concentrations.”



With optimal nutrient concentrations applied from day 1, a unique ratio of water-soluble nutrients significantly increased root development and branching, increased biomass production and shortened the production cycle, without salt burn — and our water-soluble fertilizer was born.

Dr. Peters adds, “For me as a formulator and fertilizer chemist, this type of discovery exemplifies the gratifying nature of fertilizer experimentation, where exploration can lead to breakthroughs that benefit plant growth.”

What Makes Our Nutrient Blend Special?

Dr. Peters explains that the unique nutrient blend in OASIS® Hydroponic Fertilizer 16-4-17 isn't your normal starter fertilizer: “Despite containing a low overall phosphorus concentration, the OASIS® 16-4-17 fertilizer delivers a well-balanced nutrient profile with enhanced micronutrients over a broad range of pH that promotes rapid and efficient growth in young seedlings.”

With OASIS® 16-4-17 Fertilizer, you enjoy a simple, one-bag approach to young plant production — reducing labor and costly mixing errors. With this blend's low salt index, salt burn isn't a worry. Neither is nutrient availability; an advanced chelated micronutrient package supports superior growth and yields. Plus, a proprietary blend of iron chelates helps maintain iron availability, even at pH levels as high as 8.0.

To get the best growth response, Dr. Rapaka says, “The bottom line is that, especially with inert and engineered media like OASIS® foam substrates, it's imperative to start watering with fertilizer at the right concentration with the initial soaking.”

Dr. Peters tells us the Jack's Technical Team often recommends this formula to grow anything hydroponically, especially when paired with OASIS® substrates.



Dr. Vijay Rapaka (Left)

Director of Global Operations & Research at Oasis Grower Solutions

“This high-quality, low-salt formula is a powerhouse of readily available nutrients,” she says. “It delivers a balanced blend of extremely soluble and available nutrients ensuring your plants receive the optimal nutrition they crave from the very first stages of life.”

Whatever you grow, our team and our products are ready to help — from substrates to hydroponic fertilizer and much more. Lean into Oasis Grower Solutions. Let us help you excel.