

PLANT GROWER MIKE GITZELS: 'ION-SPECIFIC MEASURING PROVIDES STRUCTURED QUALITY ASSURANCE'

AUGUST 8, 2024

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8 AUG 2024

VIEW ORIGINAL POST

The daily sampling and measurement of nitrogen in the nutrient and drain water at his own business gives plant grower Mike Gitzels peace of mind. A year and a half after purchasing the ion-specific measurement unit, he has noticed improvements in plant quality and uniformity. "With a short cultivation period of no more than five weeks, we can't afford any mistakes. This system allows us to better control growth and inhibition. And we're prepared for zero discharge."

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- MIKE GITZELS, GITZELS NURSERY

Nitrogen fertilization is crucial for the cultivation of young plants. It is the most important tool for precisely steering the crop's growth and ensuring proper hardening. Gitzels Plant Nursery, located in Wervershoof, North Holland, produces young cabbage plants from seed in their 12-hectare greenhouses for field vegetable growers. In a short period, the plants need to be in top condition, uniform, and of the correct height. This is especially important now that many vegetable growers use fully automated planting systems in the field, making it essential to deliver uniform batches. Previously, the company would send water samples to a lab once a week and occasionally performed manual measurements themselves, specifically for nitrogen. Mike Gitzels wanted to improve and automate this process to enable faster intervention in case of discrepancies.

Deviations Can Have Significant Consequences

Gitzels was the first company to invest in the CE-Line ion-specific measurement unit, an innovative, automated system for online monitoring and managing fertilizers. Originally intended for determining and adjusting fertilization recipes, at Gitzels, it is specifically used for measuring nitrogen.

Mike Gitzels explains, "We have a good base mixture with the right proportions, but by varying the nitrogen levels, you can promote growth or inhibition. We only inject nitrogen into the mixing tank with a small pump system. Deviations can occur there, which could be due to the computer, the unit, the pump, or the membrane. Such deviations can have significant consequences, but in the past, you often noticed them too late to make adjustments in such a short cultivation period. Now we have a fixed setup that measures daily, providing structured quality assurance." The measurement unit is currently connected to two of the three water units at the company.

Added Value of Drain Water Measurements

Gitzels conducts measurements of the nutrient water two to four times a day during the season. "This depends on the number of irrigation sessions and how often you want to monitor it. Each time you water, you can check a box to trigger a measurement. We're still figuring out the optimal number of measurements."

Recently, he has also started measuring the drain water, once a day in this case. "There's significant added value in that because, until now, it was very unclear what exactly you were getting back in the drain water. If you know what goes in and what comes out, you also know what the plant is absorbing. You can also take action if there are any accumulations. Drain water measurements will become even more important when we have to reuse it 100 percent in the future. Then you'll want to be sure it's suitable and know what, if anything, you need to add." One of the two water units where the system performs measurements is now operating with drain water, and the other will soon be adapted for this purpose.

Automated Alerts

If the nitrogen levels deviate too much, alerts are triggered from the Blockbox platform, which is connected to the CE-Line system. "All the data goes to Blockbox. Depending on your preferences, you can set up alerts and request graphical displays. This makes monitoring very straightforward."

The system and monitoring don't require extra time from the plant grower. "It's just a matter of checking that you want to measure when watering. After a few hours, you receive the data. Once a month, we need to replace the reagents in the system—the substances needed for conducting the analyses. That takes about half an hour. If there are alerts, you'll need to spend some time investigating the cause and finding a solution. That's all."

Optimal Plant Quality

This season, plant quality and uniformity were optimal. According to Gitzels, this is partly due to the ion-specific measurements. "Without this assurance system, you realize too late when something goes wrong, and it's difficult to correct those mistakes. I'm very satisfied with the quality of our plants this year. However, buyers had more difficulty finding the right planting moment and properly planting the plants due to the extremely wet conditions. It was a challenge to align our harvest timing with the ideal planting moment for the growers."

Resilient Cultivation

Gitzels initially acquired the system to measure nitrogen but continues to explore whether it can offer more. "For example, we conducted a trial by adding extra calcium, but it had no significant effect on the plant. At the same time, we're investigating what we can add to the soil to make the cultivation more resilient. We're looking at how and in what proportions the elements can be better absorbed by the plant. Ultimately, this will reduce the use of synthetic fertilizers."



The daily sampling and measurement of nitrogen in the nutrient and drain water at his business gives plant grower Mike Gitzels peace of mind.

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