Bushel Boy Farms Uses AI to Improve Forecasting and Crop Balance

At Bushel Boy Farms, Head Grower Roberto Ramirez identified a challenge affecting harvest forecasting: **an unexpected decrease in ripe fruit counts towards the end of the week.** By leveraging data from LUNA AI, he uncovered a correlation between fruit loss and the greenhouse's plant-lowering schedule, an insight that led to a major operational shift.

Identifying the Challenge

Roberto noticed that, despite his team's efforts, **fruit drop seemed to be impacting their harvest accuracy.** He turned to LUNA AI's insights to investigate, quickly discovering that fruit load was decreasing immediately after the weekly lowering task. This suggested that handling stress from the lowering process was causing ripe fruit to drop prematurely.

The Data-Driven Breakthrough

By analyzing fruit counts and stem width trends, Roberto pinpointed a clear pattern: when fruit load dropped, plants responded with increased vigor, indicating stress-related fruit loss. **On November 7-8, fruit loss in a single greenhouse was calculated at $9,600. That is an equivalent to $0.60 per square meter per week.**

Using LUNA's visual data tools, he demonstrated the issue to the rest of the team. With this evidence, Roberto proposed shifting the plant-lowering schedule earlier in the week to reduce fruit loss and improve forecast consistency. He also began picking more proactively, as LUNA AI showed that the most susceptible fruits to fruit drop were very ripe by the end of the week.

Optimizing the Process

Roberto presented his findings to his Grower, Ibis Najera, and Assistant Grower, Fernando Solis, at Bushel Boy's Mason City facility. The discussion confirmed that while their variety was prone to

fruit drop, the timing of the lowering task played a critical role. By adjusting the schedule to immediately follow harvesting, rather than later in the week, the team could prevent ripe fruit from reaching a critical drop point.

The adjustment delivered several key benefits:
- Reduced Fruit Loss – **Less ripe fruit was lost** due to handling stress.
- More Accurate Forecasts – Sales teams received more reliable numbers, **keeping forecasts within the 10% target range.**
- Better Crop Balance – The team maintained **more consistent plant vigor** throughout the week.
- Climate Optimization – The findings prompted a deeper evaluation of climate conditions, particularly 24-hour temperatures, to **support stable fruit development.**

Transforming Operations with AI
The impact was immediate. As Roberto reviewed the charts with his team, he noted, "This is freaking awesome!" It was a clear testament to the value of data-driven decision-making. The team quickly aligned on implementing the schedule shift, tracking the results, and integrating climate data into future optimizations.
For Bushel Boy Farms, this was **more than just an operational tweak, it marked a shift in mindset.** LUNA AI was no longer just a tool, but a critical resource for making high-value growing decisions.

Looking Ahead
Roberto and his team are now focused on tracking the long-term effects of the change, ensuring that lowering schedules, fruit retention, and climate conditions are fully optimized. Additionally, incorporating climate metrics into LUNA AI's dashboard will **further enhance their ability to fine-tune growing strategies as well as forecasts.**

This success story underscores the power of AI in modern agriculture. By harnessing real-time insights, Bushel Boy Farms has not only solved an expensive challenge but also set the stage for **improved efficiency, profitability, and long-term stability** in their greenhouse operations.

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