



How to Optimize Greenhouse Management with Data-Driven Monitoring

FRAVEBOT is a Czech startup at the forefront of agricultural innovation. It was founded by passionate experts with extensive experience in greenhouse cultivation, automation, robotics, and data analysis. Since 2022, the company has been specializing in smart, autonomous monitoring systems for greenhouses, focusing on helping growers achieve sustainable and profitable fruit and vegetable production through advanced AI and robotics.

90-95%

Time FRAVEBOT saved in comparison to developing a similar in-house solution.

85%

Reduction in manual data management.

75%

Reduction in manual pest monitoring and improvement of detection awareness.

THE COMPANY

FRAVEBOT’s flagship product, **FRAVEBOT Scout**, uses cutting-edge robotics and AI to gather plant data, forecast yields, and monitor pests and diseases, providing growers with real-time insights to optimize greenhouse operations. Complementing this, the latest solution, **FRAVEye**, offers automated sticky trap monitoring to enhance pest detection and management, either as a standalone tool or integrated with **FRAVEBOT Scout**.

These innovative solutions use GoodData® technology to transform the collected data into powerful visualizations and actionable insights in the FRAVEBOT platform. By integrating the collected data with external sources, such as climate control systems, all relevant information is brought together in one place. This approach streamlines data management and enables advanced analytics and predictive insights.

The FRAVEBOT platform allows customers to access detailed statistics and dashboards displaying real-time data and trends. The system promptly notifies growers of any issues with their plants, empowering them to make informed decisions based on the latest insights.

THE CHALLENGE

The FRAVEBOT solution captures a vast amount of data, including images and various environmental parameters. The challenge was to transform this into actionable insights that growers can readily use. With such an extensive volume of information, FRAVEBOT needed a way to connect all these data points, efficiently organize them, and visualize the results.

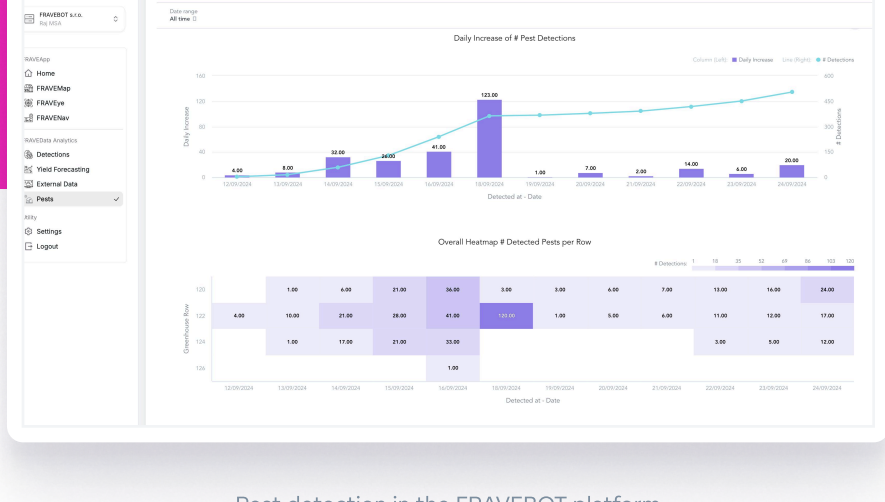
Given the startup's tight timelines and limited resources, developing an in-house system from scratch would have been too time-consuming and costly. The goal was to find an analytics tool that could integrate with their existing ecosystem while remaining intuitive enough for growers to use effectively.

FRAVEBOT began searching for a robust, widely used analytics tool that could be customized to meet their specific requirements and would enable the team to focus on refining their core product. After thorough market research, they chose GoodData.

THE SOLUTION

GoodData provided a system that allowed FRAVEBOT to seamlessly integrate, organize, and visualize critical data. Metrics such as sunlight, heat, plant ripeness, and the spread of pests and diseases could now easily be connected.

A key advantage of the integrated solution was its user-friendliness, even for non-programmers. The FRAVEBOT team could rapidly create intuitive dashboards that combined data from robotic systems and external sources, delivering actionable insights to customers with minimal intervention.



Pest detection in the FRAVEBOT platform

GoodData’s multi-tenant architecture ensures the solution is future-ready. The platform can seamlessly adapt to FRAVEBOT’s evolving needs, allowing its analytics capabilities to expand alongside the company’s development.

“GoodData made it easy for us to implement analytics with versatile visualizations. Its automation and user-friendly design enable our customers to access insights seamlessly, with minimal intervention from our team. The support and Slack channel have also been incredibly helpful for addressing any technical questions.”



Otilia Porubiaková
R&D Data Science and FRAVEData Analytics
Lead, FRAVEBOT

Top GoodData features that match FRAVEBOT’s requirements

Ease of implementation:

FRAVEBOT’s new solution was up and running in a few weeks.

User-friendliness:

For both developers and end-users.

Scalability:

Multi-tenant architecture ensures the solution can adapt to FRAVEBOT’s evolving needs.

THE RESULT:

So far, FRAVEBOT has successfully deployed three robotic systems: two in commercial tomato greenhouses located in the Czech Republic and Slovakia, and one in a commercial cucumber greenhouse near Brno, Czech Republic. Empowered by the data collected from FRAVEye, the system connects plant symptoms analyzed by the FRAVEBOT Scout with pest detections from sticky traps, providing growers with comprehensive real-time data for informed decision-making – all displayed through user-friendly dashboards.

This system represents a significant improvement for the commercial greenhouse community, where detailed and accessible analytics were previously challenging to obtain. The transition from cumbersome Excel sheets to intuitive visual dashboards has impressed users, providing them with easier access to the insights they need to optimize their operations effectively.



Yield forecasting in the FRAVEBOT platform

By reducing manual data management tasks, the FRAVEBOT platform saves growers countless hours each week through automated insights. It has also dramatically streamlined pest monitoring processes, improving awareness of pest detections and enabling early identification of outbreaks. This proactive approach has prevented crop losses, empowering growers to protect their yields and focus on optimizing production.

Looking ahead, FRAVEBOT plans to further enhance its analytics capabilities by introducing self-service features. These enhancements will empower growers to explore and interact with their data more deeply, enabling them to make more informed decisions and manage their greenhouses with even greater confidence.