



Industrial Agricultural Monitoring

Everything is Coming Up Roses for AgroPatterns
with Blues Wireless

A Rose by any Other Name Would Smell as Sweet

Have you ever wondered how the Internet of Things can play a key role in the journey of flowers from seed to store? Blues Wireless customer InfoPatterns, a global presence in the fresh flowers business, offers a suite of modules that harness the power of cellular connected IoT to provide predictive, precision agriculture to the flower industry. Started four years ago, the AgroPatterns product suite from Infopatterns serves the fresh flower industry with customers in Colombia and Ecuador. Infopatterns CEO Gabriel Coch tells us how Blues Wireless technology helps his customers meet their production goals in this behind-the-scenes look.

The Journey of Fresh Flowers from Seed to Store

The fresh flowers industry faces many hurdles from field to shelf. Flowers are delicate, require a lot of maintenance, are highly perishable, and face a long journey across multiple continents from field to store. Did you know Colombia alone supplies up to 70% of the fresh flowers sold in the United States?

Lots of flowers—as much as 45%—do not make it to store shelves. So those fresh Valentine’s Day or Mother’s Day flowers you buy are the end result of a 3- to 4-month, meticulously timed process. Timing is crucial to the industry because fresh flowers are worth a lot more before a holiday than after.

Many of the fresh flowers sold are grown in the mountainous region of Colombia, South America. Flower growers operate their business in football field-sized, semi-open greenhouses filled with large beds of flowers in various stages of growth. Growing operations consist of many greenhouses, with each greenhouse containing over \$1 million of inventory, staffed with agronomists, plant managers, and workers, all collaborating to ensure the highest yields. Each growing cycle is scheduled to deliver the right quantity of flowers for a specific delivery day. Certain holidays demand extremely high volumes, and this is accounted for in the growing plan.



The Need for Efficient Remote Condition Monitoring

Many environmental factors can diminish output or even spoil the entire crop. To optimally manage a plot of flowers, the ambient temperature and humidity must be controlled. Under hot conditions and low humidity, insects proliferate. Under lower temperatures and higher humidity mildew and fungus proliferates. Both conditions reduce agronomic outputs, reducing yields and causing supply chain waste.

Growers can implement countermeasures to reduce damage, like adding beneficial insects and



using chemical fungicide or pesticide. But because each countermeasure comes at an economic and environmental cost, growers must reduce countermeasure usage by staying on top of growing conditions. Each day agronomists alter the care plan to maintain the expected yield. After all, many mothers will be eagerly awaiting their bouquet of fresh flowers and these emotionally charged expectations must be met with flowers delivered timely and in peak condition.

Using Remote Condition Monitoring in Industrial Farming Use Cases

The AgroPatterns product by Infopatterns is a suite of modules providing vital intelligence to fresh flower growers. On the growing room floor, scouts work inspecting plants and plant beds for issues. As issues are spotted, scouts make notes using an offline mobile application and then sync the data once they arrive at the local office. Agropattern IoT devices located in each greenhouse record real-time temperature and humidity, then consolidate the information in dashboards used by Agronomists to appropriately adjust the care plan for each bed in each greenhouse to support the growth goals for the crop.

“What we are doing at Information Patterns is developing technologies that can help reduce waste, reduce toxicity, and make this a more sustainable and environmentally friendly industry while also addressing the needs of the flower growers,” according to Infopatterns CEO Gabriel Coch. “We are enabling our customers to better supply their products by having enough product bloom at exactly the right time.”



The Realized Benefits of Remote Condition Monitoring in Grow Houses

AgroPatterns has grown by 7X since the start of the global COVID-19 pandemic. Growers want to make data-driven decisions and take advantage of AgroPatterns’ intellectual property so they can maximize their yield while avoiding expensive or toxic countermeasure use. AgroPatterns is gaining popularity across the globe with new clients in Israel and Kenya who are attracted by three main benefits:

- They can replace floor workers' use of paper and pencils with electronic notes synced to the cloud.
- Rather than wait for tabulated records to become usable, they can empower agronomists to work with real-time data, reducing the need for insect or fungal countermeasures, reducing costs, and avoiding exposure to workers.
- They have access to a system optimized for the unique needs of the fresh flower industry. Given the product moves from seed to store in less than 3 months, this is key to reducing waste and increasing profits by running an efficient business.

How to Learn More

Powered by Blues Wireless technology, the AgroPatterns product from Infopatterns helps fresh flower growers in Colombia, Ecuador, Kenya, and Israel anticipate and optimize yield, reduce waste, avoid expensive chemical treatments, and get more fresh flowers to market. The AgroPatterns product uses the Blues Wireless Notecard, for zero-configuration cellular connectivity, available now in over 130 countries. AgroPatterns' combination of ease of use and low cost helped Infopatterns launch new capabilities to growers without the need for infrastructure like broadband, or even electrical outlets.

Stay up to date with the latest breakthroughs in Wireless IoT technology and applications. Visit us at [Blues.io](https://blues.io), subscribe to [our newsletter](#).