

Case | North Carolina, US

A North Carolina farm proving less water can yield more crop

Cultivating unique vegetables and herbs is a lifelong passion for a husband and wife team of specialty farmers in Lincoln County, North Carolina. Their farm has a deep-rooted history of providing healthy, homegrown food to their community. But like any farmer, their success hinges on one crucial element: **efficient and reliable irrigation.**

That's why when they needed a new pump solution for their newly drilled well, they knew exactly where to turn. Having used a Grundfos pump for more than 25 years with no issues, they reached out to the company again, this time with a specific problem to solve.

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GRUNDFOS

Possibility in every drop



The situation

The couple's love for farming is evident in everything they do. "It's been part of my entire life, and I just love it," the husband says. They cultivate a diverse array of crops year-round, from common vegetables like beets and corn to unique Italian varieties like broccoli rabe and heirloom eggplants for local chefs.

In addition to serving restaurants and farmers' markets, they donate a third of their harvest to regional food pantries. "It feels good to know we are providing people with healthy food," his wife adds. This commitment to their community and to sustainable practices drives their farming philosophy.

While they carefully prepare the soil with organic matter to help retain moisture, they acknowledge that irrigation



is critical. "Despite our best efforts in preparing our soils, irrigation during the spring, summer, and fall months is absolutely critical. We definitely rely on our irrigation pumps."

For years, the couple used a traditional pressure-switch-driven pump. While it worked, they knew they needed a more advanced solution for their new well. "We had just drilled two irrigation wells and we regard water as extremely precious," the husband explains. "I definitely heard of the variable flow/constant pressure approach, but I wanted to know more. I asked the experts at Grundfos and the local well specialists, and their advice was unanimous: variable flow / constant pressure."

The solution

The farmers shifted to a simpler, more efficient irrigation solution based on drip tape. This evolution was made possible, in part, by Grundfos' smart pump technology.



The limitations of their old solution were explained as follows: "With traditional pressure-switch controlled solutions, the pump and tank work together to deliver the flow within a preset pressure range, typically 40 to 60 psi, a 20-psi swing." This constant cycling and high pressure led to wasted energy, shortened pump life, and made it difficult to accurately apply the right amount of water. "Water is precious, we only want to put down what is needed, we don't want to waste it," they emphasize.

The Grundfos SQE pump with a CU 302 controller was the perfect solution. It minimizes on/off cycling by automatically adjusting its RPMs to the required flow, all while maintaining a more consistent pressure. "Uniform pressure is important for irrigation, especially drip tape, emitter, and sprinkler applications," the farmers explain. "You don't want over-pressurized or under-pressurized areas resulting in excessive or insufficient watering."

The solution installer adds, "the difference with this farm's installation and pump solution is it had a very specific flow rate and a very specific pressure to maintain, and any other solution would not have it down in the way that the Grundfos pump does."





The outcome

The new Grundfos solution has provided the farm with significant benefits, including savings in power consumption, water usage, and irrigation solution materials. “The smart pumps with the smart controllers are definitely savers, saving us both energy and water,” the owners say. “I can now more accurately measure the amount of water we are putting down with this technology.”

“The technology is great,” adds the installer. “You can see everything, including all the performance records, in real-time.”

The farmers are very impressed with both the technology and the support they’ve received from Grundfos. “I’m very satisfied,” says one. “I often glance at the pressure gauge at the wellhead. It reads a nearly steady pressure with minimal fluctuations, which tells me the solution has reached equilibrium and the field is getting a continuous flow. It is doing exactly what it is supposed to do.”

They add that the support is equally as important as the product itself: “Not only are the pumps excellent in design, but they are backed up with tremendous field support. Grundfos is a transparent company. Yes, they are a global giant with all the benefits of that, but they act like a small local business. They do an excellent job of supporting their products, not just physically through their installers and field support, but online with their applications and available information.”



Grundfos supplied

A Grundfos 22 SQE15-220 pump with CU 302 controller was installed on a new well for a specialty farm’s irrigation solution.

Topic

Farming, Specialty Farming, Irrigation, Water Efficiency, Energy Efficiency, Constant Pressure, Groundwater

Location

Lincoln County, North Carolina

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