



THE UNIVERSITY OF VERMONT

EXTENSION

QUARTERLY

SUMMER 2018  
INNOVATION  
ISSUE

## MAKING NUTRIENT MANAGEMENT EASIER WITH GOCROP™

With UVM Extension and goCrop™ farmers are learning how to effectively manage nutrients on their farms and in turn are reducing costs, increasing yields, and minimizing negative impacts on water quality.

Tim Magnant of Bridgeman View Farm in Franklin uses goCrop™ to keep track of "everything" on his 120-cow dairy farm. From fertilizer used to crops harvested, the web application created by UVM Extension is an integral part of nutrient management for Magnant.

Like Bridgeman View, over a third of Vermont dairy farms have used goCrop™ to write their Nutrient Management Plans (NMP). But early versions of UVM Extension's NMP training courses taught farmers how to create and store plans on paper. The system worked, but farmers reported the binders as cumbersome, difficult to manage, and ultimately an obstacle to plan implementation.

An alternative system was needed and **UVM Extension Agronomist Heather Darby** met the challenge. She worked closely with dairy farmers to create goCrop™, an integrated web and mobile application designed for in-field recordkeeping and real-time calculation of nutrients.

Since 2015, 245 farmers have attended UVM Extension's NMP training courses and used goCrop™ to develop plans in accordance with the Required Agricultural Practices (RAPs) of Vermont's Clean Water Law (Act 64). The tool continues to evolve with new features including a module for vegetable growers, a grazing component, and a whole farm nutrient balance tool expected to release this year.

Magnant says, "it's hard to improve something if you don't understand it," but goCrop™ makes that task easier.

Learn more at [go.uvm.edu/gocrop](http://go.uvm.edu/gocrop).

“ I keep track of all my fertilizer, all my manure, all my crops that I harvest. I keep track of everything on my goCrop. ”

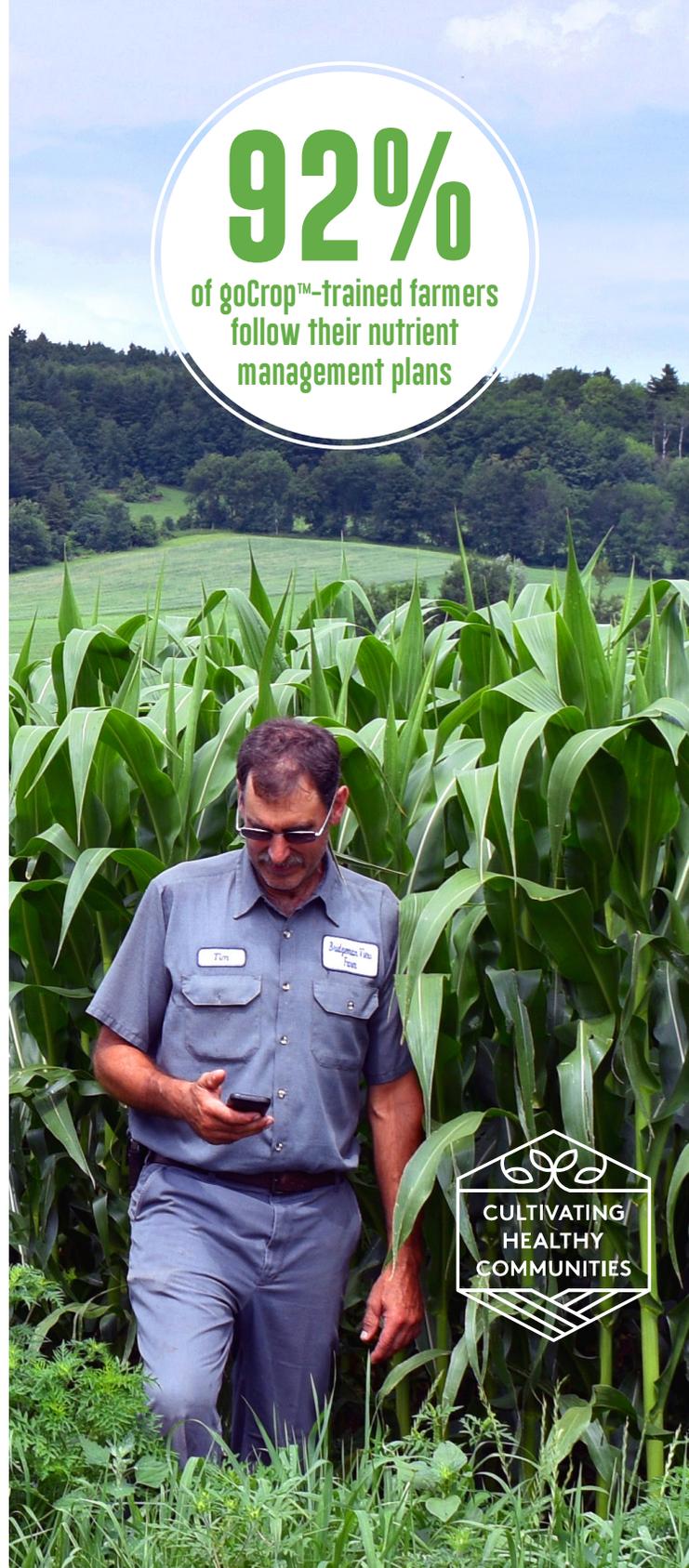
*Tim Magnant, Bridgeman View Farm*



goCrop™

92%

of goCrop™-trained farmers follow their nutrient management plans



# “DEWING” RIGHT FOR FOOD STORAGE

\$10,000 a year. That’s the amount of money **Chris Callahan, UVM Extension agricultural engineer** (inset, left), predicts his invention could save artisanal cheese and meat producers. Produce growers would save too: an annual average of \$6,500.

The invention (U.S. Patent No. 9689819) is “DewRight™.” It measures temperature and humidity in high-humidity environments, like those required by food storage and processing facilities. Existing sensors on the market give readings that are off by as much as 6% and have a high failure rate in high-humidity environments. The DewRight™ improves that accuracy by 67% and

uses a design more suitable to that environment. This allows farmers and producers to reduce spoilage, and increase yield and quality.

Vermont Energy Control Systems (VECS) specializes in monitoring and controlling temperatures for small spaces and buildings. VECS took Callahan’s patent to the next level by working with UVM Innovations to license and develop it commercially. DewRight™ was a natural companion for their Vesta line of controllers and sensors, and is already in use at 10 facilities including Mad River Food Hub in Waitsfield.

Learn more at [www.vecs.org](http://www.vecs.org).



## DRONES SPARK THE NEXT GENERATION OF INNOVATORS

When 14-year-old Carbur Rousseau heard the words “drone” and “camp” together, his curiosity was piqued. Interest grew once his parents explained that, “we’d be flying drones, learning how to make maps, and how to use the drones to do more than just leisurely fly around.”

Twenty-nine teens have participated in the three-day summer “Drone Camp,” offered in both 2017 and 2018.\*

The camp is a partnership between UVM Extension 4-H and UVM Rubenstein School for Natural Resources Spatial Analysis Lab. Campers learned how to fly different kinds of drones and how to use the data procured while flying to make maps and other images. They also learned about careers that use this type of technology.



**Sarah Kleinman, UVM Extension 4-H program director,** sees programs like these as opportunities for youth to find something they’re passionate about or interested in. “When youth find that ‘spark,’ it can send them on a positive trajectory for life,” she says.

The camp is designed to promote creative thinking, innovation and our next generation of problem solvers. By flying a drone, learning how to download data from it, and discovering new ways to put that data to use, campers are laying a foundation for their future careers.

Learn more at [go.uvm.edu/youth](http://go.uvm.edu/youth).

“When youth find that ‘spark,’ it can send them on a positive trajectory for life”

**Sarah Kleinman**  
UVM Extension  
4-H Program Director

**29%** higher earnings for STEM\*\* workers over non-STEM

**8.9%** expected growth in STEM fields from 2014-2024

\*Grant funded by U.S. Air Force Child and Youth Programs through Kansas State University under special project number 2013-48696-21184 \*\*STEM: Science, Technology, Engineering, and Mathematics. Infographic Data from the Office of the Chief Economist at the U.S. Department of Commerce in their “STEM Jobs: 2017 Update”