DEAN HANDER

Innovative Washington Dairy Aims to **GO** Carbon *Negative*

BY DEAN HANDER

Photo by: Wikimedia

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A co-third generation farmer in Washington's Columbia Basin, Austin Allred cut his teeth on row crops and orchards. But even since high school, he's had something else to prove.

Allred, the owner of Royal Dairy, has embarked on large-scale **regenerative agriculture** that go far beyond achieving net zero carbon emissions, which has been the goal of most sustainable agriculture practitioners. Allred's farm is now a carbon farm that sequesters more than it gives off in its wake. They can be an essential force for protecting the planet, while still providing a healthy long-term ROI.

Austin Allred stands with the aerobic/anaerobic digester on the eight-acre Buttner farm.

"There is no reason why every agriculture system should be carbon negative," says Allred, who has a herd of nearly 10,000 cows. "To be carbon negative means not only to offset zero emissions but actually to remove more carbon dioxide than is emitted. Strong carbon negative when you are utilizing sunlight and rather together is a very realistic goal."

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>
> – Austin Allred, owner, Royal Dairy

INNOVATIVE FARM MANAGEMENT WITH AMBITIOUS GOALS

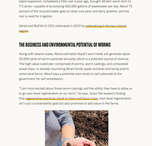
Royal Dairy, a farm of the West customers. In about 150 miles southwest of Seattle, it's a member of the Northwest Dairy Association (NDA) and supplies milk to the NDA processing subsidiary, Darigold. With its carbon negative goals, Royal Dairy is a member of the Carbon Farmers of America, a cooperative that is working with the US government estimate generation **to a project of all greenhouse gas emissions**.

Royal Dairy's anaerobic digester. Its 1,000 cows the total energy to the farm's electricity and 1.5 million cows. Allred's farm is the first in the nation.

The **1.5 million** anaerobic digester at Royal Dairy reduces GHG's is powered by the farm's electricity.

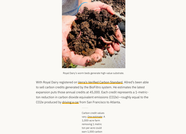
"I was looking for a solution to clean our water and to convert our lagoon into an irrigation pump," he recalls. Like other **young farmers trying to achieve ecologists**, he was concerned about the impact of his family's farming on the health and economic resources and water recycling systems designed for livestock.

While at the Tulare Farm Show, he found an international companies called **BioFriendly** which happened to be another Bank of the West client. BioFriendly offered a pioneering wastewater solution powered by worms. Its systems have helped dairies and other food processing companies to recycle wastewater, reuse and feed processing and sterilization to work.



Infographic Design: Rose McClure

The biological processes behind BioFriendly's AnaMet. Aerobic (BIOA) system happens in 5 from deep concrete tank. Wastewater settles through a worm- and microbe-filled bed of sand. Clean water is then pumped into a storage tank, ready to drain by storage tank. Within four hours, the system removes 99 percent of wastewater contaminants.



At Royal Dairy, Austin Allred wants to be carbon negative.

Royal Dairy's aim as part of Washington's agricultural sustainability.

Royal Dairy installed its pilot BIOA system in 2014, and expanded it in 2016. The system now processes 20,000 gallons of wastewater per day. Allred's farm produces 7.5 acres—capable of processing 400,000 gallons of wastewater per day. About 75 percent of the recycled water goes to clean cow pens and dairy systems, and the rest is used for irrigation.

Allred and BioFriendly's CEO celebrated in 2016 by **submitting to the the control agency**.

THE BUSINESS AND ENVIRONMENTAL POTENTIAL OF WORMS

Along with cleaner water, Allred estimates Royal's worm beds will generate about 20,000 pounds of worm castings annually, which is a potential source of revenue. Worm castings are a rich fertilizer, and Allred's farm is working with a local company to develop a recovery system to extract fertilizer, kill pathogens, and bring back to some local farms. Allred says a potential worm economy is not a pipeline to the government for soil remediation.

"I am most excited about these worm castings and the ability they have to allow us to go next level regeneration on our farm," he says. Given the research finding that **Washington's agricultural sustainability practitioners** have been the Washington Soil Carbon is sustainability goal but also promises to add value to the farm.

Royal Dairy's worm beds generate high value nutrients.

With Royal Dairy engineer on **dairy to BioFriend Carbon Technology**, Allred's farm utilizes the Carbon Farmers of America's Dairy Methane Reduction Project, which has sequestered carbon three annual credits at 100 metric tons of carbon dioxide equivalent emissions (CO2e)—roughly equal to the CO2e produced by **driving cars** from San Francisco to Atlanta.

Carbon credit value
Carbon credit price
1,000 metric tons
CO2e
Average price
per ton: $15.00
Total carbon credit
value: $15,000
annually

LEVERAGING SOFTWARE FOR SOLUTIONS

Allred has years ago, Allred's agronomist and his consultant advice to help Royal Dairy and Allred family farms do a better job tracking their carbon footprints. Developed by Colorado-State University and the Natural Resource Conservation Service, **COMET-Farm** software helps Allred manage dairy and beef farms, field crops, and orchards.

COMET-Farm calculates greenhouse gas emissions/carbon sequestration and carbon footprint.

It's helping us manage all of that and really can't a baseline and determine how we can improve, where we can improve, and what we can do better," he says.

Since Allred started using COMET-Farm, he says operations have improved their per-acre and carbon sequestration by more than 5 acre of 150 greenhouse emissions. It's a market where companies are increasingly **interested in sustainable agriculture**, those gains have potential meaning value. Allred's farm alone is more direct impact on his operations as well.

"Carbon in the soil reduces your synthetic fertilizer—that is a huge savings," he says.

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MAKING A CASE FOR CLIMATE-FRIENDLY CROPS

Allred acknowledges people typically don't associate carbon negatively dairy cows—the methane they produce is a major source of greenhouse gases. But he says that properly managed, ruminants actually can, and Allred's farm and cows can change that.

"Without (carbon) role in our agriculture system, I would venture to say—and I'd just my career on it—that our soil health goes to crap really fast," Allred says.

The Allred family at a photo shoot for Dairy.

Austin Allred helps to keep cows in the family through future generations.

Allred's current project is to spread awareness about the importance of carbon by developing a transparently so called **Farmer Brand**. A set of organic, the app is a way to educate consumers about an animal's role in a sustainable system. The farm would provide a QR code on its milk cartons, so people can learn about the specific carbon footprint attributed to individual animal life. The app also features Allred charities. Plans include third-party certification of other equally transparent regenerative farms.

Allred is confident Royal Dairy and associated Allred family operations can and will reach his carbon negative goal, while also running a healthy business.

The various value adds of embracing regenerative agriculture practices presented by the carbon footprint calculator, including overall sustainability, they, the savings from synthetic fertilizer reduction, intersection and much leading to improved crop yields, and the ability to tap into the growing consumer demand for products certainly boost your EBITDA and help **build strong farming generations**.

"It's **dynamic and continuously** evolving," he says. Allred says he is very excited.

"We don't have to give up our profit in order to create an incredible regenerative system," Allred says.

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DEAN HANDER

Dean is an Cross-based freelance writer who can't resist odd stories and radio-friendly voices. She covers sustainability, food and agriculture, entrepreneurship, and anything that connects people with places and food.

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