

Vermont Farmers Lead the Way in Soil Health, Water Quality, and Climate Change Mitigation



Healthy Soil Improves Water Quality and Sequesters Carbon

According to a recent study, **Vermont is number one in the nation** in the adoption of conservation practices.^{3,4}

Over 30% of Vermont's annually tilled fields (approximately 26,000 acres) have a cover crop planted in the fall. The U.S. average is only 2%.^{1,2}

What Does this Mean for Our Environment?

Carbon is removed from the atmosphere by cover crops and this offsets emissions.

If all 80,000 acres of Vermont's land used to grow corn was cover cropped, the carbon sequestration would be equivalent to taking 51,290 cars off the road.²

Organic matter increases along with the water holding capacity of soil.

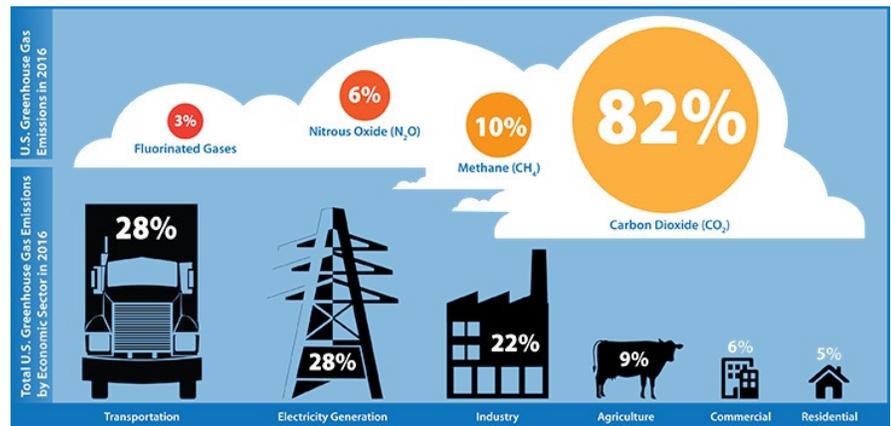
Every 1% increase in organic matter allows soil to hold **20,000 gallons more water per acre.**²

In 2016-2019, Vermont farmers were responsible for 90% of the phosphorus reductions to support the Lake Champlain Total Maximum Daily Load (TMDL), through clean water projects.⁶

What About Methane?

Agriculture makes up 9% of total U.S. GHG emissions, and dairy represents 2% of that. U.S. dairy cows produce the lowest amount of greenhouse gases per gallon of milk compared to all other countries in the world.

The primary source of emissions from dairy production is methane. Methane makes up about 10% of U.S. GHG emissions, while carbon dioxide makes up 82% of emissions.



Carbon dioxide, generated primarily from the transportation industry, has a lifespan of 1,000 years, with no chemical process in the atmosphere to destroy it. Methane has a lifespan of 10 years, and after that it's destroyed as part of the natural carbon cycle between cattle and plants. As long as the number of livestock remains constant or decreases, this process does not add any new carbon to the atmosphere.⁵

New England Dairy is a non-profit education organization staffed by registered dietitians and other professionals that champion New England dairy farmers and the nutritious foods they produce.

Contact Us:

289 Hurricane Lane Suite 201, Williston, VT 05496
info@newenglanddairy.com, 802-876-7266

Vermont Farm Feature: Gervais Farm | Enosburg Falls

Located at the top of a range of rolling hills in Enosburg Falls sits the Gervais Family Farm. The farm was purchased by Robert and Gisele Gervais in 1960. Three of their sons, Clement, Larry and Paul, as well as Robert and Gisele's Granddaughter Kati – now all co-own the farm. The past 60 years have brought many changes to the farm, the herd has grown, technology has evolved, and multiple generation now lead. One thing that hasn't changed is the farm's commitment to the environment.

Right: Kati Lawyer Hale, of Gervais Family Farm, speaking to WCAX about dairy farming at Breakfast on the Farm, hosted by the Gervais family in 2018.



The Northeast region has seen a 71 percent increase in two-inch rainfall events since 1958 according to data from UVM Extension. That increase in water amplifies the importance of the work being done by farmers in Vermont to mitigate flooding, erosion and the effects of climate change.

The Gervais Farm in Enosburg Falls has been at the forefront of adopting new technologies and practices that protect the environment. From investments in equipment for no-till planting and cover cropping, to the establishment of buffer strips to prevent runoff and erosion on fields; farmers like the Gervais family understand that investments in the environment are good for the farm and good for the region.

The farm maintains roughly 3,000 acres of land. Eighty percent of that acreage is cropped using a no-till method, meaning the soil is kept intact and not tilled during planting. They also plant a cover crop on more than 90 percent of their land in the fall after the corn is harvested, which keeps a growing plant in the soil year-round to absorb excess moisture and soak-up important nutrients like phosphorous.

Practices like these are key to increasing the health of agricultural land. For every 1 percent increase in organic matter through the adoption of cover crops and no-till, the soil retains an additional 20,000 gallons of water per acre. Vermont soil averages nearly 4.5 percent organic matter thanks to the work of farmers and producers, well above neighboring regions.

Carbon is also removed from the atmosphere by cover crops, offsetting emissions. If cover cropped land increases to the highest possible acreage in Vermont, farmers could offset emissions for up to 51,000 cars, according to data compiled by agronomists with the University of Vermont Extension.

The Gervais Family Farm is a member of the Farmer's Watershed Alliance. This league of farmers works together to educate one another, share resources and assistance, and strives to establish environmentally positive solutions for farmers in Northern Vermont. The Gervais Farm is just one of about 100 members of the group adopting new technologies and practices to protect the soil, air and water in the Lake Champlain Watershed.

Sources

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