



AgriTech Institute
for Small Farms

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Virtual Fencing Pilot Project



Presentation to VT House
Agriculture Committee
February 5, 2025

2023 – 2024 VT Legislative/VHCB Virtual Fence Project

House Agriculture Committee Presentation, February 5, 2025

- **Dan Smith, Executive Director, Agritech Institute**
<https://www.agritechinstituteforsmallfarms.org>
- **Ben Nottermann, Snug Valley Farm, Hardwick**
<https://snugvalleyfarm.com>

 Agritech Institute For
Small Farms, Inc.

Mission

Promoting agritech tool use by small farms to improve their financial and environmental performance, and enable them to combat climate change.





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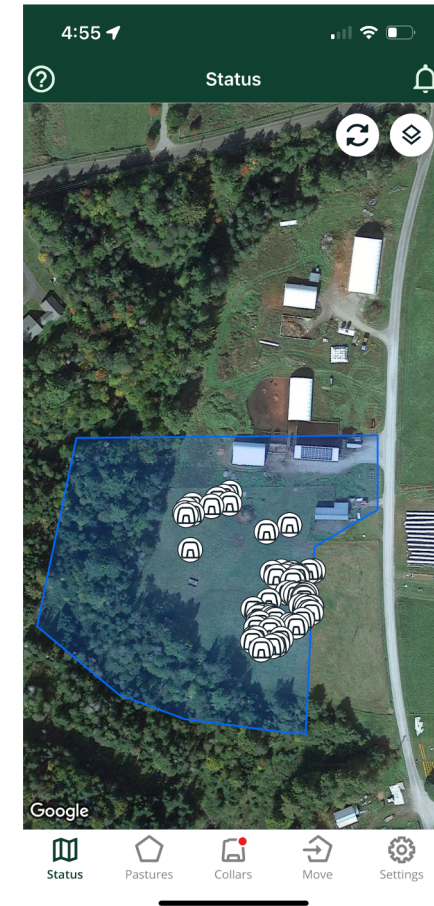
Action Steps

To Promote Small Farm Use of Agritech:

Identify innovative
established and early
stage agritech tools

- Academic Research
- On-farm R&D
- Financing support
- Collaboration and Education

Technology Project #1: Virtual Fencing





2023 – 2024 VT Legislative/VHCB Virtual Fence Project

3 VT Cattle Farm Grazing Trials

7 VT Small Ruminant Vegetation Management Trials

1 Goat Dairy Farm Trial

Funding

- *Institute*
- *Lintilhac Foundation*
- *VLITE*

- *Leg/VHCB*
- *DBIC (+ 2 ME dairy farms)*

2023 – 2024 VT Legislative/VHCB Virtual Fence Project

Cattle Farm Grazing

- *Snug Valley Farm (Beef) (2 years)*
- *Harrison Home Farm (Non-lactating dairy cows)*
- *Westman Farm (Non-lactating dairy cows)*
- *2 Maine farms*

2023 – 2024 VT Legislative/VHCB Virtual Fence Project

Vegetation Management

- *Washington Electric Coop ROW (Goats)*
- *Stowe Electric Department ROW (Goats)*
- *Magic Mountain Ski Area (Goats)*
- *Riverbank Knotweed Control (Goats)*
- *Field Grazing – (Goats)*
- *Solar Array (Sheep)*
- *Sensitive wet pasture area - Shelburne Farms (Lambs)*

- *Goat Dairy Farm/Milking Goats*

Snug Valley Farm

2023 Big System Challenge

- NoFence cattle equipment shut down when interacting with 4G and 5G cellular networks.
 - Nofence stopped US sales for 2023
 - 2023 Project trials limited to Snug Valley Farm and One Maine dairy farm
 - Forced all others to be conducted only for the 2024 Season
- ❖ Snug Valley Farm was very successful

2024 Operational Successes

✓ **Improved Rotational Grazing**

- *Improved animal and forage management*

✓ **Viable Alternative for Vegetation Management**

- ❖ **Far More Effective Exclusion Zones for Sensitive Water Quality Areas**

- *Stored Data of Animal Movement*

✓ **Improved Labor Efficiency**

- *5 Minutes per move*

✓ **Promising Payback Ratios**

2024 Operational Challenges

❖ *Upfront Cost*

❖ *Continued Inadequate Cell Service
Across the State*

- Predator Protection
- Battery Depletion
- Transmission line width

Project Report Findings and Recommendations

- *Success/Limited Data = Continuation/Expansion of Assorted Pilot Trials*
- *Collaboration with VTCovered to Expand Cell Service Connectivity*
- *Continued Development of Finance Program*
- *Collaboration for Education and Outreach*



Noxious Weed (Knotweed) Trial

Ski Area Trial



Solar Array Trial



Media Coverage of the Project

<https://www.wcax.com/2024/10/17/gps-goat-collars-make-their-debut-vermont/>

<https://www.chestertelegraph.org/2024/09/17/derry-farm-tests-fenceless-technology-for-grazing-goats/>

https://www.reformer.com/local-news/goats-graze-magic-mountain-test-new-technology/article_038b28be-7439-11ef-8b9c-931fa490e357.html

<https://vtdigger.org/2024/06/07/cows-in-electric-collars-vermont-farmers-pilot-virtual-fencing-technology/>

<https://www.sevendaysvt.com/food-drink/farming-technology-reduces-pollution-increases-production-42115707>

<https://www.addisonindependent.com/2024/10/03/addison-farm-corrals-cows-with-virtual-fence-technology/>



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