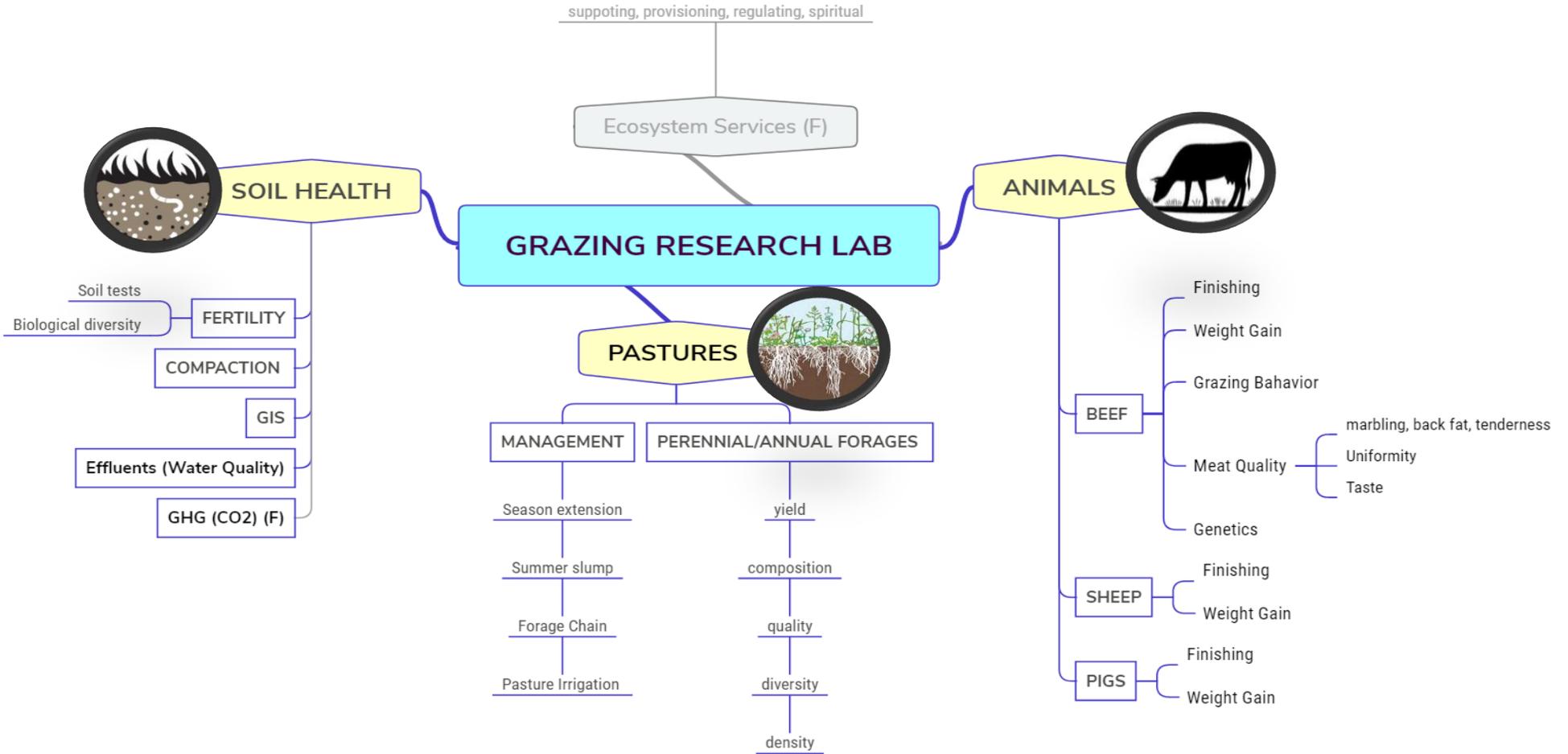


Grazing R&E Lab

Juan Alvez, Ph.D.

Research Associate

Pasture Program, UVM Extension, Center for Sustainable Agriculture

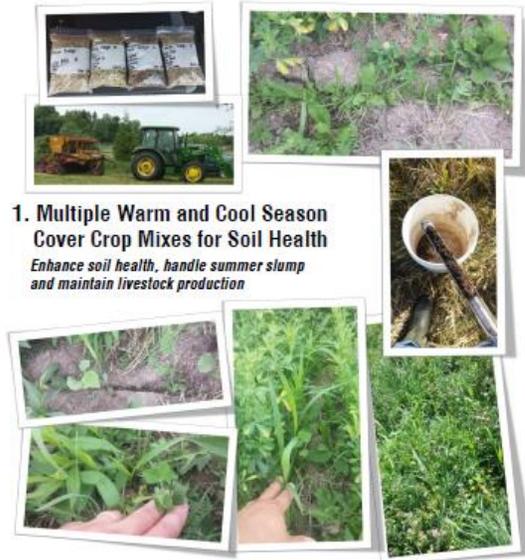


Enhancing Research and Education for Grass Farmers

Juan P. Alvez, Ph.D. | jalvez@uvm.edu | 802-656-6116



Center for Sustainable Agriculture
Pasture Program



1. Multiple Warm and Cool Season Cover Crop Mixes for Soil Health

Enhance soil health, handle summer slump and maintain livestock production

2. Animal Performance Across Multiple Warm and Cool Season Cover Crop Mixes



Photo: Philo Ridge Farm

Beef cattle performance and quality on transitioning pastures;

3. Effects Of Forest "Living Barn" Shelter on Animal Welfare And Production

Evaluate behavior and performance of animals with access to shelter.



Photo: B. Chesday

4. Forage Yield, Quality and Botanical Composition of Pastures Within Forested Areas

Asses pasture performance and quality across different shade patterns;

Our purpose is to conduct long-term applied research in soil, pasture, livestock and ecosystem interactions, and make those results accessible to the broader scientific and farming communities.

7. Outreach and Educational Activities



Photo: Juan Alvez

Workshops and field days (pasture, garden and forest walks with specialists); photo and video documentation of land changes, benefits, wildlife, etc. to be shared through electronic and printed media.

6. Bedded Pack Management and Contributions to Soil Health



What is the nutrient value of bedded packs? How much \$ is the equivalent contribution?

5. Precision Irrigation in Pastures



Photo: Pasture Program Archive

Test amendments, cover crops, overcome the summer slump, and extend the grazing season

Enhancing Research and Education for Grass Farmers.

Juan Alvez, Ph.D. (UVM Extension, Center for Sustainable Agriculture)

Abstract

The Center for Sustainable Agriculture, Pasture Program (UVM Extension) has established a new research program at a nearby diversified pasture-based farm, to test innovative applied research ideas, explore and enhance collaborations, and share information among farmers, academics, and service providers. This “living laboratory” will help us better understand how to work with Vermont's pasture farmers who are seeking to meet market demand for grass-fed meat while managing their farms using ecological principles.

More and more, informed consumers and a better understanding of the health and environmental benefits of producing humanely raised animals in well-managed pastures have increased consumer interest in grass-fed products. While the niche is still developing, the demand for grass-fed products has grown at an annual rate of 25-30% per year since 2003*. We are committed to helping farmers produce the healthiest beef -and other meats- while improving soil health and forage quality under the highest environmental and ethical standards. Projects already underway are framed under an integrated soil-pasture-animal management approach, in order to improve soil health and enhance forage production and quality to accelerate beef production. Currently, we are studying the following projects: multiple warm- and cool-season cover crop mixes for soil health; animal performance across multiple warm- and cool-season cover crop mixes; effects of woodland shelters on animal production; precision irrigation in perennial and annual pastures, and contributions of composted bedded packs to soil health. Results will be appropriately shared with farming and scientific communities.

Excerpt Project: Soils Health library

Soils are fragile and endangered vital resources, though not a non-renewable ones. Previous farm practices at former Foote Farm (currently, Philo Ridge Farm), were more soil disturbing than current ones, sometimes favoring higher disaggregation and erosion. In addition, climate-change-induced shifts in precipitation cycles and synthetic inputs used in conventional agriculture, contributed to soil depletion and exhaustion in some fields.

While in general, the rate of soil erosion in Vermont has been lower than the national average -- likely due to the prevalence of smaller-scale agricultural operations-, the work to regenerate not only soil functions, but also entire ecosystems has begun at Philo Ridge Farm.

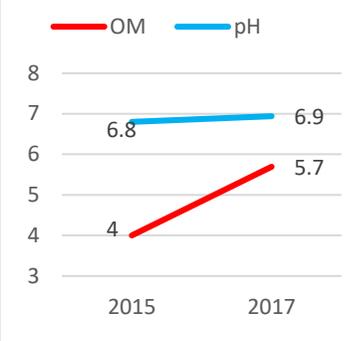
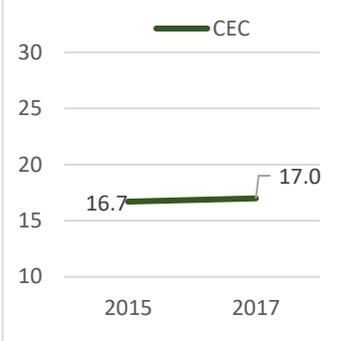
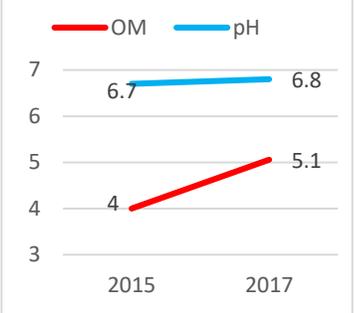
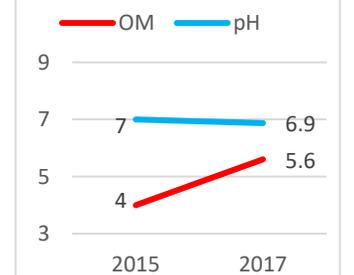


Figure 17. Soil cores taken at different fields reveal diverse degrees of coloration indicating different levels of organic matter.

We compiled the results of 25-30 composite samples collected and processed from 13 fields at Philo Ridge Farm, and compared them with values from 2015 soil tests, to monitor how the farm fields respond to changes in management using soil conservation practices, such as, less tilling, cover cropping, intensively managed grazing. Since 2015, most fields increased organic matter levels, cation exchange capacity, and stabilized pH, suggesting that taking into account soil conservation practices, can result in improved soil health. A new round of samples are required again in 2019, in order to confirm this positive trend.

Selected soil attributes (e.g.: organic matter, pH and cation exchange capacity), from selected fields, showed a positive evolution suggesting that soil conservation practices are key for enhancing soils.

Table 1. Selected fields increased selected soil attributes such as, organic matter, pH and cation exchange capacity.

Field	Organic Matter, pH	Cation exchange capacity															
Grazing Field	 <table border="1"> <caption>Soil Attributes for Grazing Field</caption> <thead> <tr> <th>Year</th> <th>OM</th> <th>pH</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>4</td> <td>6.8</td> </tr> <tr> <td>2017</td> <td>5.7</td> <td>6.9</td> </tr> </tbody> </table>	Year	OM	pH	2015	4	6.8	2017	5.7	6.9	 <table border="1"> <caption>Cation Exchange Capacity for Grazing Field</caption> <thead> <tr> <th>Year</th> <th>CEC</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>16.7</td> </tr> <tr> <td>2017</td> <td>17.0</td> </tr> </tbody> </table>	Year	CEC	2015	16.7	2017	17.0
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