Unlocking Value Through Biology in Alfalfa

How do you determine whether a forage management practice is actually creating value? Start with additional dry-matter yield, but do not stop there. Higher-quality forage may be worth more per ton, replace purchased protein or other feed ingredients, and potentially support greater production from each ton fed.

Looking at these factors together provides a more complete picture of the economic value being harvested from every acre. Applying a broad-spectrum biological like **LiquiLife (LL)** or **LiquiLife Plus (LL+)** after each cutting can help support the goal of increasing a forage crop's value.

A Practical LiquiLife Program for Alfalfa for Improved Alfalfa Yield

- Apply LiquiLife 1-3 days after cutting, preferably after harvest traffic.
- Use 5 gal/ac of LiquiLife (or 2.5 gal/ac of LiquiLife Plus) with Liquid Supercharger (or a liquid carbon-based food source) at 1 oz per gallon of LiquiLife.
- Use enough carrier water for uniform coverage; apply with irrigation, fertility, or another compatible field pass.
- Avoid chlorinated water and harsh fungicides in the tank.

For today's Tips from the Tailgate, we will look at three on-farm alfalfa examples where LL and LL+ helped improve alfalfa yield, forage quality, and farm economics.

Broad-Spectrum Biology Improving Yield

Ohio alfalfa: In an organic alfalfa comparison in Ohio, LL at 5 gal/ac with Liquid Supercharger increased dry-matter yield over the control after the 1st and 2nd cuttings and returned an estimated net value of **$111.84/ac** and **$54.77/ac**, respectively.

Treatment	Treatment Description	1st Cutting DM Yield Tons/Acre	2nd Cutting DM Yield Tons/Acre
Control	Water Only	0.82	0.979
BioActive LiquiLife Pass	5 gal/ac of LiquiLife with 1 oz/gal of Liquid Supercharger	1.281	1.25

1st Cutting Net Value Advantage/Acre	2nd Cutting Net Value Advantage/Acre
$111.84	$54.77

Preliminary results point to a positive quantitative response. The LiquiLife treatment increased dry-matter yield compared with the control and generated a positive net-value advantage after treatment costs. Additional cuttings will help determine whether these benefits remain consistent throughout the season.

Broad-Spectrum Biology Improving Yield + Forage Quality

Minnesota on-farm trial: A 2023 on-farm trial in Minnesota evaluated LiquiLife with a liquid carbon source for forage yield and quality. LiquiLife was broadcast at 5 gal/ac with a liquid carbon food source after the first cutting, and forage-quality results were measured from the second cutting.

The treated area produced **1.26 tons of dry-matter yield** compared to **0.83 tons** of dry matter in the control and showed improvements in crude protein (**24.13% compared to 19.76%**) and RFQ (**180.85 compared to 169.61**).

The forage analysis also indicated improved digestibility across ADF, NDFom, NDFD30, and uNDF240 measures, along with a higher calcium measure.

Economic Measure	Calculation or Assumption	Estimated Advantage
Yield advantage	Gain of 0.43 tons of DM/acre on LiquiLife-treated acres	**$129/acre**
Forage-quality advantage	11.24 RFQ point improvement, 4.37% more crude protein and improved digestibility	**$68.86**
Combined ROI	Total estimated ROI after accounting for treatment cost	**$5.05 per $1.00 invested**

Broad-Spectrum Biology in a Programs Approach

Minnesota on-farm observation: A separate Minnesota on-farm observation further adds to the forage-quality dimension. An application of LiquiLife+, broad-spectrum biology with nanotechnology, with Liquid Supercharger as its food source, along with a combination of potassium, sulfur, boron, and other organic amendments, was applied before the first cutting.

Testing of the first-cutting forage reported crude protein of **23.57% versus 19.92%** and RFQ of **237.9 versus 204.15**. This improvement in forage quality generated a positive ROI after accounting for treatment costs of **$6.82 per $1.00 invested**. The farm also reported feeding less corn and soybean meal because of the increased forage quality.

Economic Measure	Calculation or Assumption	Estimated Advantage
Improved RFQ	33.75-point improvement x $1.50/RFQ point x 2.475 ton/ac first crop	**$125.56/ac**
Improved protein in forage	3.95% more crude protein; equivalent to 415 lb of 47% organic soybean meal at $950/ton	**$197.00 less spent on soybean meal**
Total estimated increase in profit	Improved RFQ plus soybean meal savings	**$322.56**
Combined ROI	Total estimated ROI after accounting for treatment cost	**$6.82 per $1.00 invested**

Broad-Spectrum Biology Improving Farm Economics

For dairies and forage growers, the value proposition for broad-spectrum biology extends beyond added hay tonnage. A timely post-cutting biological program can help alfalfa produce more dry matter while also supporting important forage-quality measures such as crude protein and RFQ.

That combination matters because better-quality forage can reduce the need for purchased forage, corn, or protein supplement in the ration. The Ohio and Minnesota examples should not be blended into a single proof claim, but together they illustrate a practical opportunity: biology can help improve both the quantity and value of feed produced from each cutting.

The ultimate focus is improving the farm's financial return, and biology is a tool for improving forage-crop profitability. Within a well-managed forage program, the right biological approach can help support more productive cuttings, improved forage quality, and stronger returns on the overall crop investment.

Photos from Organic Ohio On-Farm Operation, 2026



1st application



Control and LiquiLife



1st Cutting - 32 days after 1st application