

## GROWMARK FS, LLC Field Trial on Alfalfa

### Applying Solu-Cal S Enhanced Gypsum with INTENSIFY Soil Microbial BioCatalyst

#### Background

The GROWMARK FS and Solu-Cal team created a trial on alfalfa at two dairy farms in Western NY to evaluate if Solu-Cal S (Enhanced Dihydrate Gypsum) would impact yield and forage quality.

In consultation with Lawrence R. Jones, PhD, Vice President, FARME Institute, Inc. (Feed-Analysis-Research-Management-Education), the goal was to help farmers find ways to produce as much protein with high quality forage as possible. Dr. Jones is focused on dairy economics and helping dairy farmers manage feed quality and produce milk more profitably. Given the high cost of soy meal (beginning in spring 2021), higher protein yields will help farmers get more ROI for their crops.

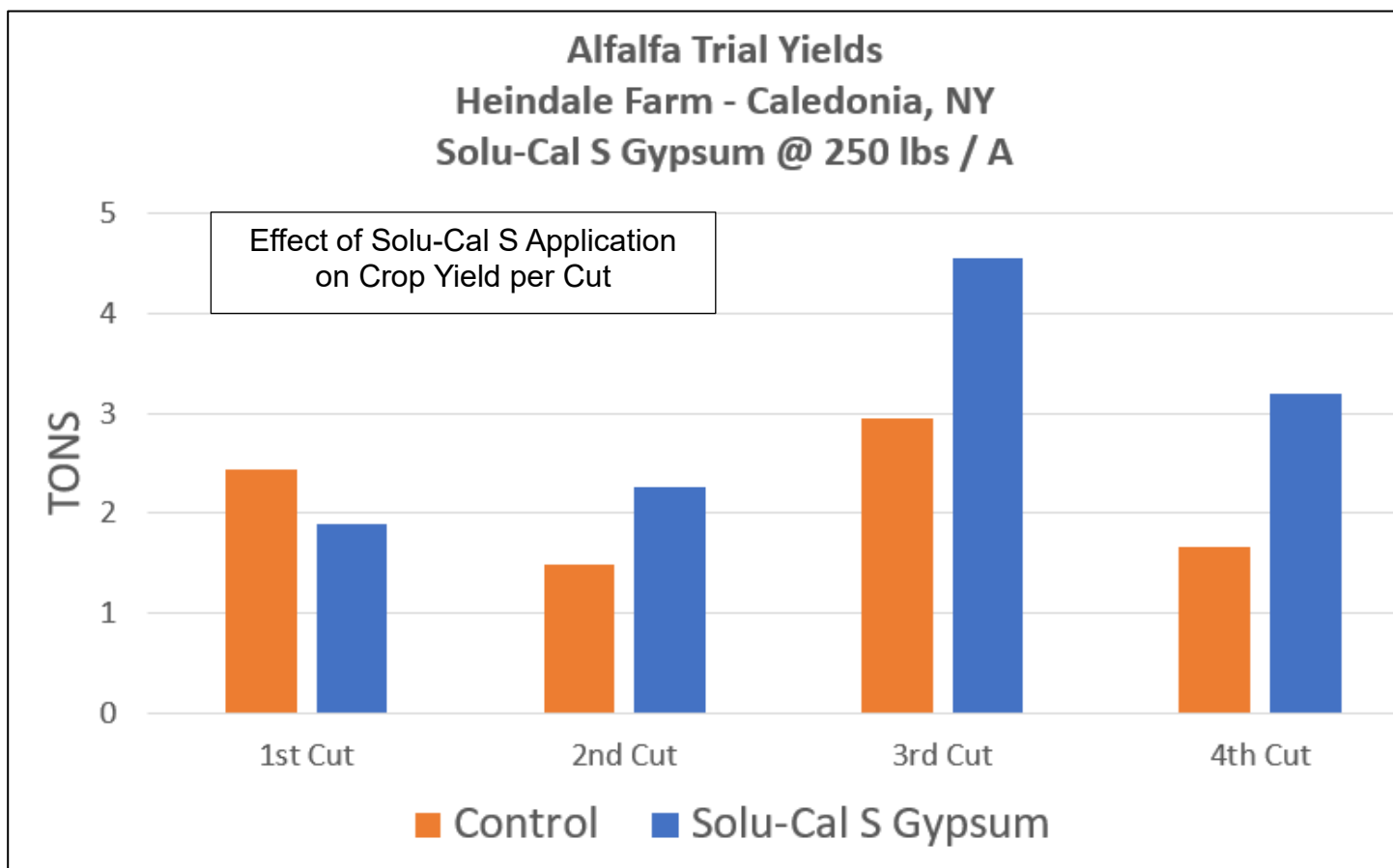
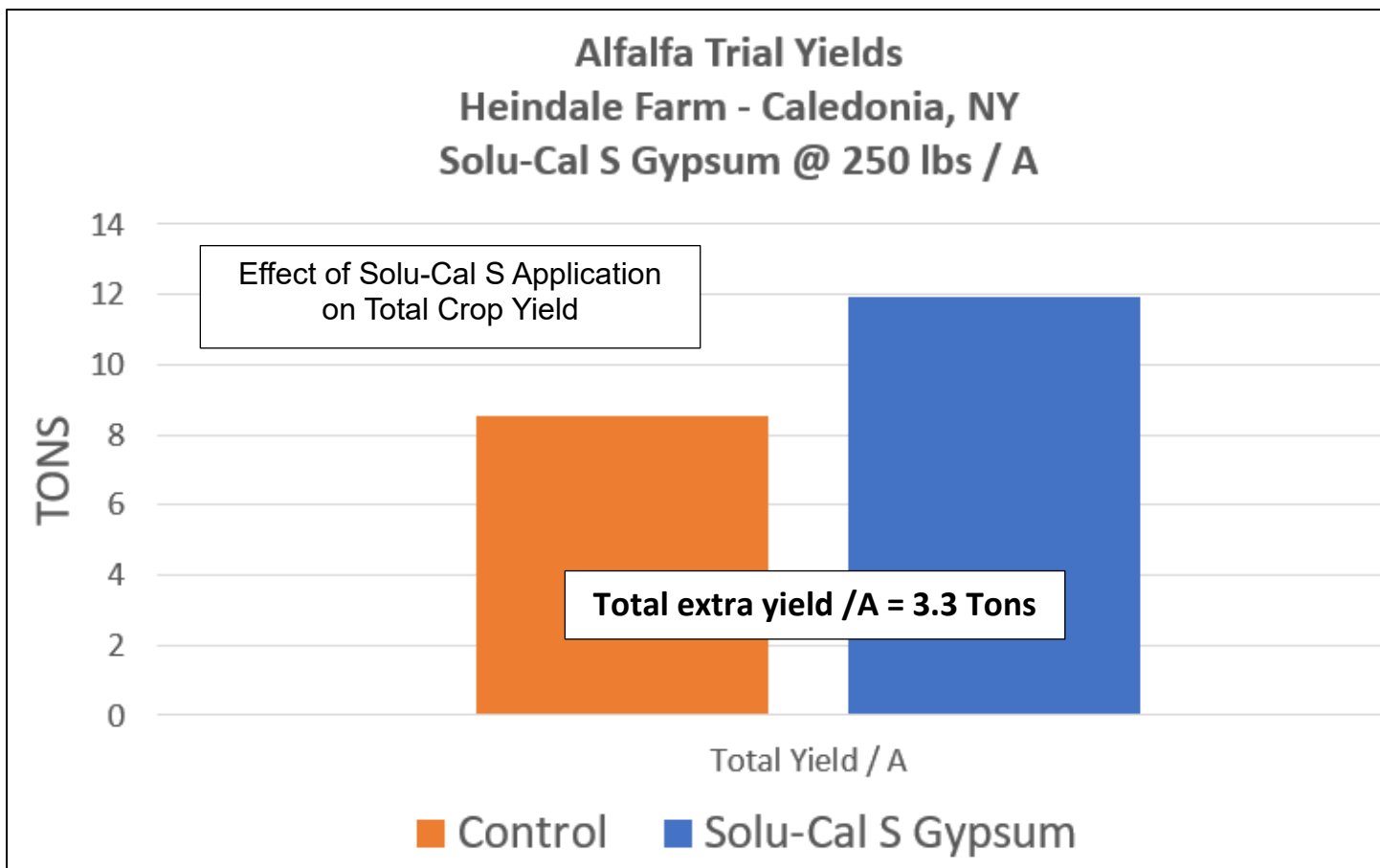
#### Overview

- Solu-Cal S delivers Intensify BioCatalyst - a robust package of 9 beneficial microbes that help to make stored and applied nutrients more available to the plant
- Solu-Cal S (Gypsum) applied at 250 lbs. to supply Calcium and Sulfur, both key nutrients for protein production
- Crop also received Potash and Boron applications
- Measured yield by truckloads weighed at scales
- Forage samples sent to lab, reviewed by Dr. Lawrence Jones
- Goal - determine ROI for these applications on all four cuttings.
- Dr. Jones listed the value of 1 ton alfalfa at \$80.00/ton, and the value of extra protein at \$55.00 per Acre
- High cost of protein from soy meal (~\$400/ton) makes getting all the yield and feed value from on farm crops even more important

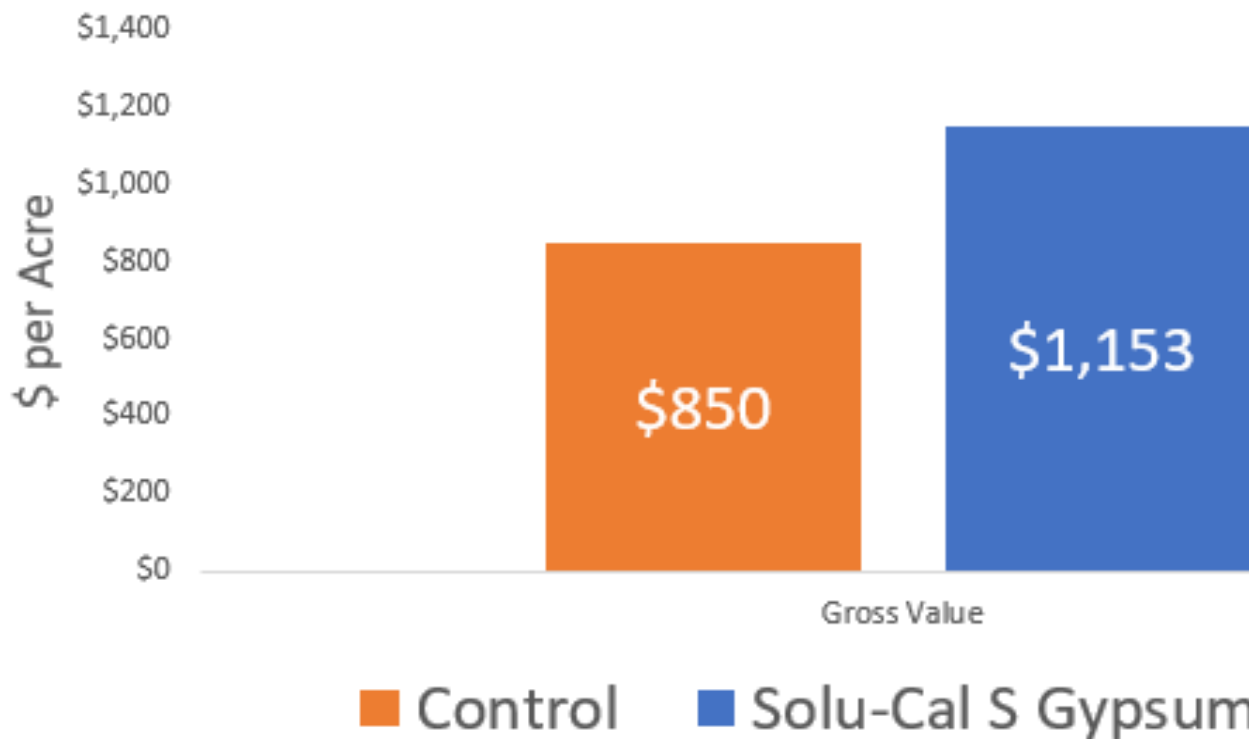
#### Intensify BioCatalyst robust package of beneficial microbes

<i>Paenibacillus polymyxa</i> .....	150,000 cfu per gram
<i>Bacillus subtilis</i> .....	150,000 cfu per gram
<i>Bacillus pumilus</i> .....	150,000 cfu per gram
<i>Bacillus licheniformis</i> .....	150,000 cfu per gram
<i>Bacillus amyloliquefaciens</i> .....	150,000 cfu per gram
<i>Bacillus megaterium</i> .....	150,000 cfu per gram
<i>Azospirillum amazonense</i> .....	150,000 cfu per gram
<i>Azospirillum lipoferum</i> .....	150,000 cfu per gram
<i>Trichoderma harzianum</i> .....	150,000 cfu per gram

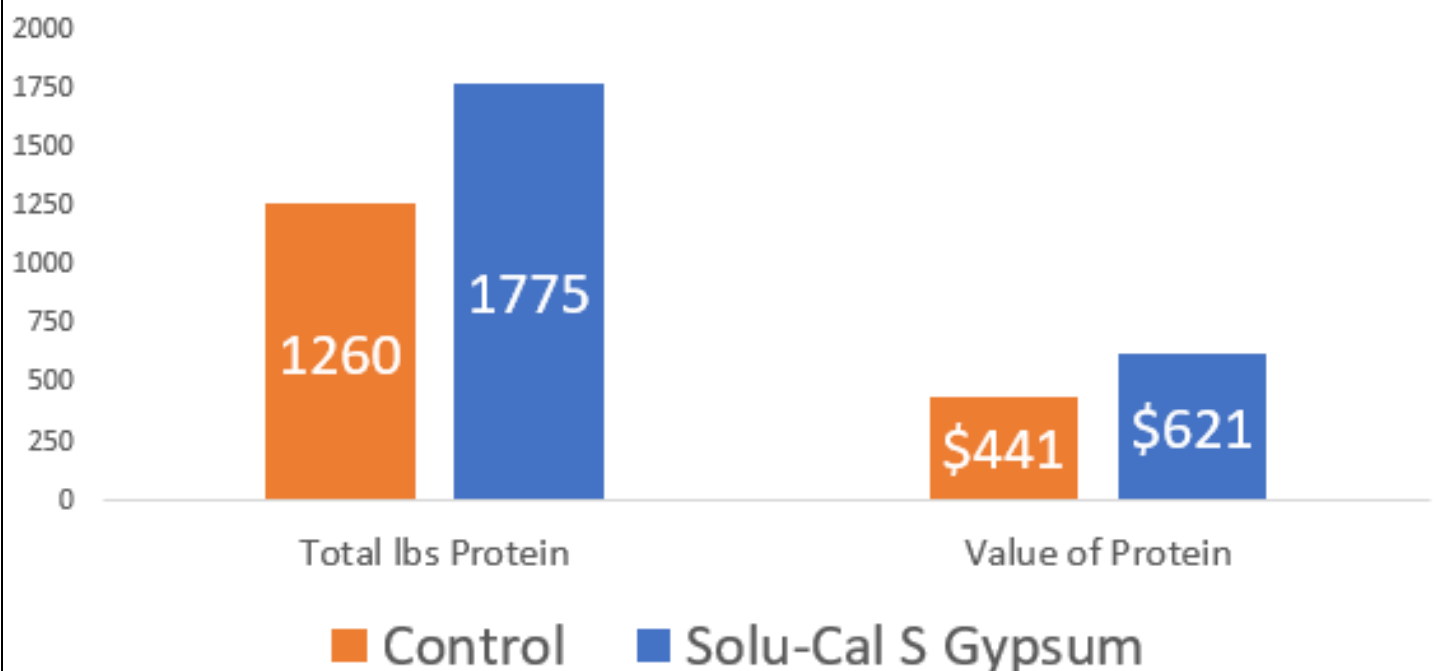
Data and Results



### Effect of Solu-Cal S Application on Total Crop Value Alfalfa Trial – Heindale Farm, 2021



### Value of Solu-Cal S Application on Protein Content & Value Alfalfa Trial – Heindale Farm, 2021



## Solu-Cal S Enhanced Gypsum

- Delivered significant ROI with a low application rate.
- Just 250lbs / A produced 3.3-ton yield bump and improved ROI (when combined with the added protein value)

### Application Rate 250 lbs / A

Avg. Cost/A	Value of 1T Haylage	Value of extra Protein/A	Potential ROI @ +1 ton/A	Potential ROI @ +2 tons/A	Potential ROI @ +3 tons/A	Actual yield - ROI @ + 3.3 tons/A
\$68.00	\$80.00	\$55.00	\$67.00	\$147.00	\$227.00	<u>\$251.00</u>

### Conclusions

- Dr. Lawrence Jones feedback on forage value
  - Value of 1 ton alfalfa = \$80, extra protein = \$.35/#
  - The yield + protein bump at 250 #/A is a "home run"
  - This is an observation - we need to prove repeatability

### Opportunity for Dairy Farms

- pH was not an issue in the area so Solu-Cal S Gypsum was applied in this trial
- Raising low soil pH will increase nutrient availability
- Consider blending Solu-Cal S or Solu-Cal Plus (with Intensify BioCatalyst) at 250-300 lbs. / A with Potash and Boron or NPK applications to increase yield, forage quality, and total protein.
- Help produce more on farm protein, reduce soy protein purchases
- Talk to your GROWMARK crop advisor to determine the best fit for your soils, crop plans, and feed quality.