

# FIELD TEST RESULTS

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# ALFALFA



## 2013

### CHI ENHANCED LIQUID HUMIC AND FULVIC PRODUCTS INCREASED ALFALFA FEED QUALITY

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- **Objective:** To use enhanced organic matter (humic and fulvic acids) based products to increase alfalfa feed quality
- **Collaborators:** Larson – Grassland Dairy – Wolfe Brothers Farms, Idaho, US
- **Period:** 2013
- **Tested products:**  
CHI Liquid Carbon and Liquid Fulvic (Dextrose) - sources of humic and fulvic acids, and dextrose sugar  
CHI Liquid Carbon (5-4-4): sources of humic acids and 5N-4P2O5-4K2O nutrients
- **Tested crop:** Alfalfa
- **Locations:** Dubois, Boise, and Grand View, Idaho, US

#### ■ DESIGN OF EXPERIMENT

##### Site 1: Dubois, Idaho, US

- **Control (129 acres):** 0 treatment
- **Treated (129 acres):** 2½ USG CHI Liquid Carbon/acre + 1/5 USG CHI Liquid Fulvic (Dextrose)/acre

##### Site 2: Boise, Idaho, US

- **Control (75 acres):** 0 treatment
- **Treated (55 acres):** 2½ USG CHI Liquid Carbon (5-4-4)/acre

##### Site 3a: Grand View, Idaho, US

- **Control (55 acres):** 0 treatment
- **Treated (60 acres):** 2½ USG CHI Liquid Carbon (5-4-4)/acre

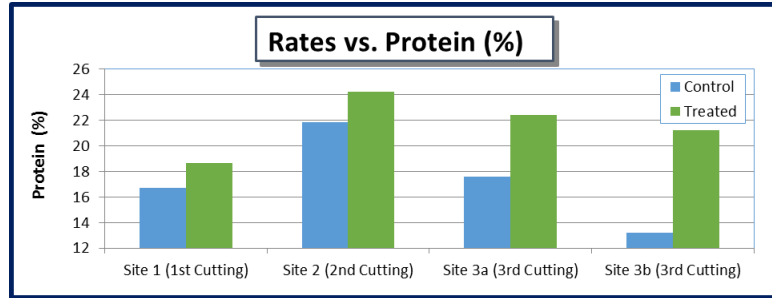
##### Site 3b: Grand View, Idaho, US

- **Control (60 acres):** 0 treatment
- **Treated (60 acres):** 2½ USG CHI Liquid Carbon (5-4-4)/acre

CHI Powder/Granule was applied in fall (after 2010 harvest) for 2011 growing season. This product provided a slow-release source of humic acids, breaking down naturally in soil. In 2011, 120N-50P2O5-90K2O lbs/acre nutrients were applied during seeding + 30N lbs/acre side-dress.

## RESULTS

Alfalfa yields (1st cutting) for Site 1 were 2.5 (control) and 2.8 (treated) MT/acre, or 12% increase. No significant yield differences were observed for other sites at approx. 3 MT/acre (one cutting). However, protein and relative feed value (RFV) for all sites increased significantly with enhanced humic and fulvic products, i.e. up to 60.6 and 30.6%, respectively.



## CONCLUSIONS

The application of CHI-Liquid Carbon, Liquid Fulvic (Dextrose), and Liquid Carbon (5-4-4) resulted in significantly higher protein and relative feed values (RFV) of alfalfa.

