

TWIN RIVERS PRODUCT TRIAL

Application of Liquid Humic to Wheat and Barley

Agricultural humic acid products have the potential to increase crop yields by helping plants take up nutrients more easily through the promotion of soil microbial activity. Humic acids can also stabilize soil structure in compacted soils, increasing water holding capacity while preventing erosion. There are numerous humic products available in Alberta that can be applied as either a granular or liquid soil amendment. Liquid humic is usually applied at seeding or as a foliar spray at the two to four leaf stage. This research trial investigates whether humic acid boosts cereal crop yields and grain quality in a dry growing season in Northern Alberta's Peace Region.

This small plot trial studied the effect of liquid humic application at seeding on the performance of wheat and barley in heavy clay soils. The humic product sourced from Twin Rivers Farms was applied in furrow at a rate of 1 gal/ac. The crop varieties used in the trial were AAC Wheatland CWRS wheat and CDC Copeland barley.

Task	Timeline	Details
Seeding	June 9	Wheat 132 lb/ac Barley 150 lb/ac
Maintenance	May 10 – July 14	Urea 110 lb/ac S15 80 lb/ac Glyphosate (pre-seed) 1 L/ac Coragen 0.71 L/ac Fluroxypur 240 mL/ac; Clopyralid 84 mL/ac; MCPA Ester 281 mL/ac
Harvest	Sept. 15	Straight-cut

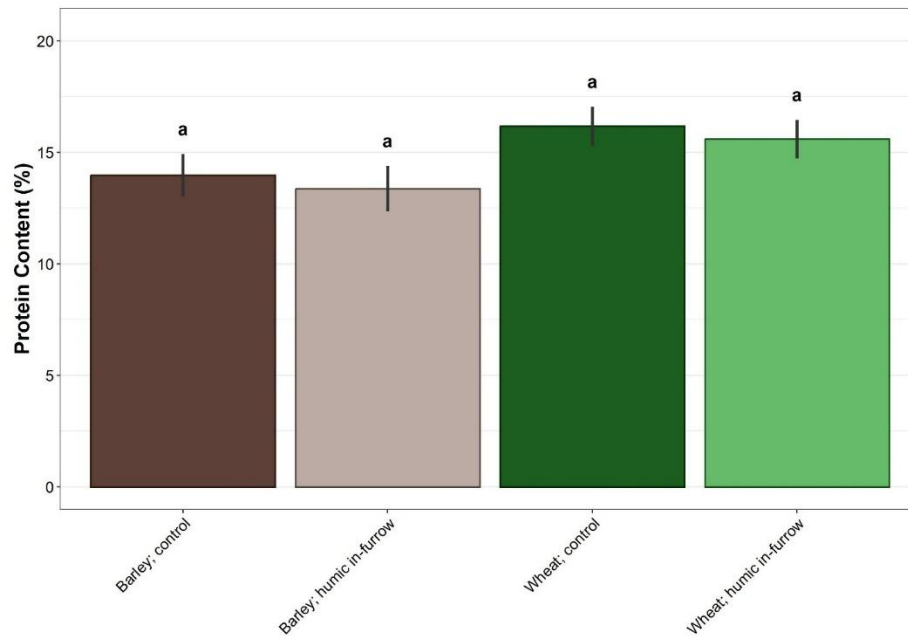


Figure 1. Effect of liquid humic acid application on protein content (%) in wheat and barley under dry growing conditions in Northern Alberta.

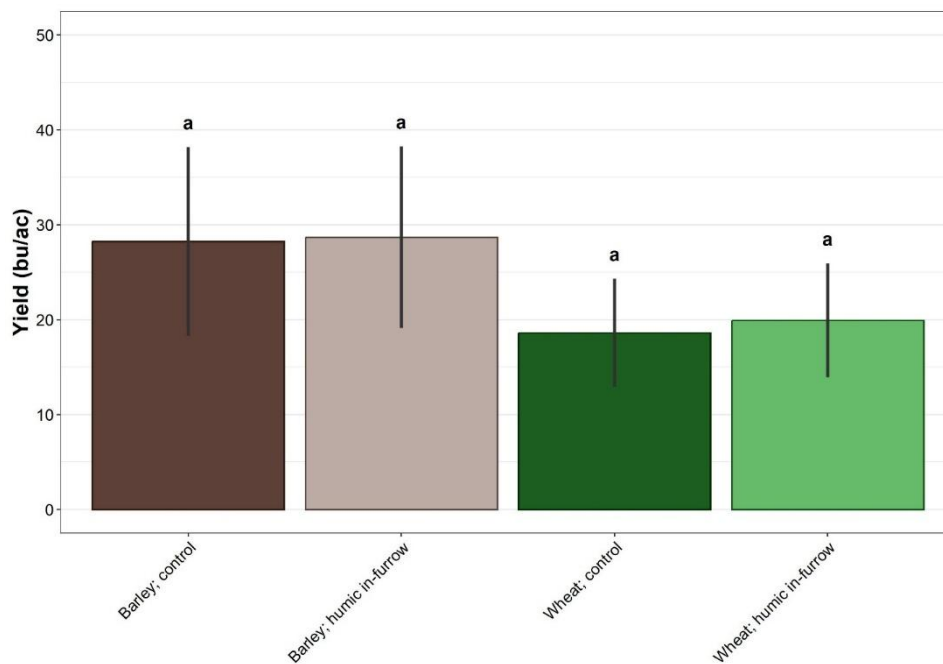


Figure 2. Effect of liquid humic acid application on grain yield (bu/ac) in wheat and barley under dry growing conditions in Northern Alberta.

Our findings demonstrate that in-furrow liquid humic acid application under the 2025 growing conditions in Northern Alberta neither enhanced wheat nor barley grain yields or their percent protein contents. No significant statistical differences were observed as all treatments performed similarly. We suspect the prevailing dry growing conditions and the heavy clay soil at the North Star research site may have restricted the potential treatment effects; therefore, further research across multiple growing seasons and soil conditions is recommended to fully evaluate liquid humic acid efficacy in the Peace Region. Past research in other areas of Alberta indicate that at least 3 years of humic application are required before changes in soil properties will be observed.