

FIELD TEST RESULTS

SOIL COMPACTION



2016

CHI GRANULE REDUCED SOIL COMPACTION

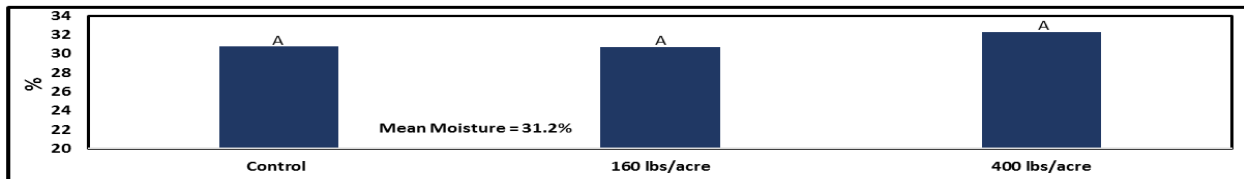
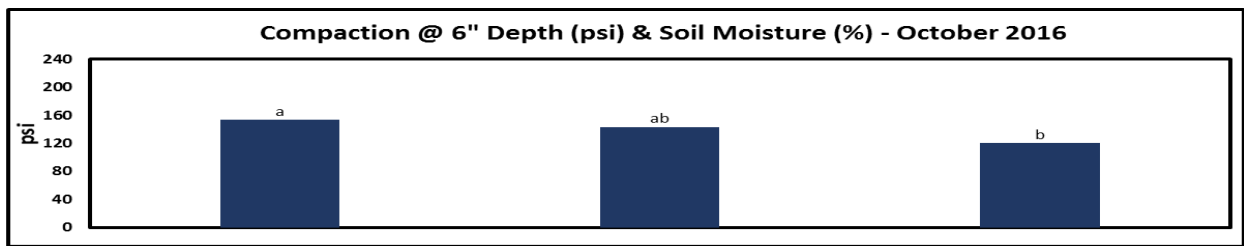
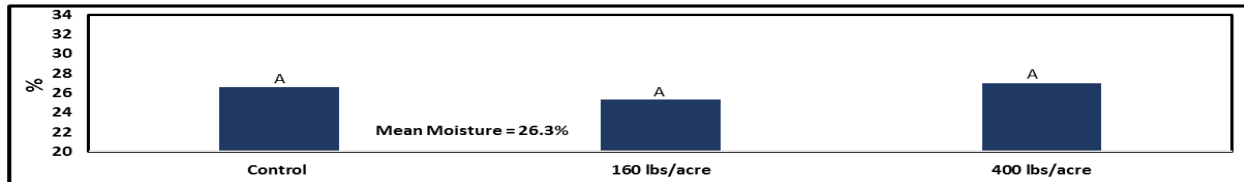
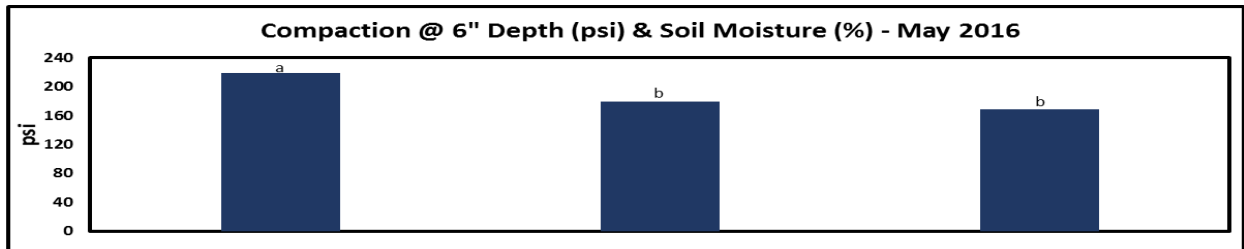
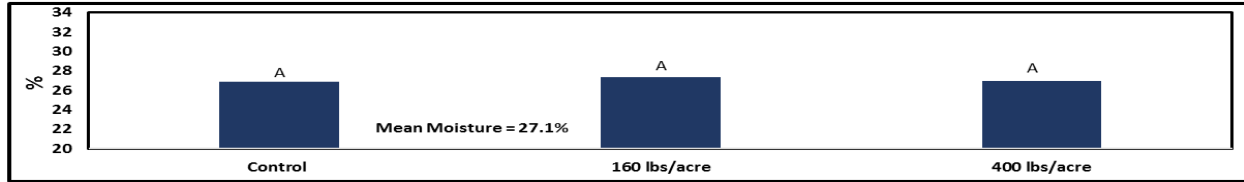
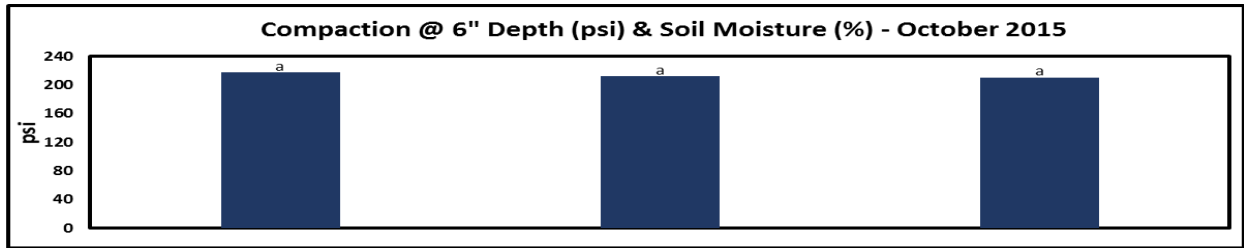
- **Objective:** To use organic matter (humic acids) to reduce compaction of heavy clay soil
- **Collaborator:** AU Farms, Sturgeon County, Alberta, CANADA
- **Period:** October 2015 to October 2016
- **Tested product:** CHI Granule (source of humic acids)
- **Tested crop:** None
- **Location:** Sturgeon County, Alberta, CANADA
- **Soil type:** pH = 7.0; organic matter (OM) = 4.4%; sodium adsorption ratio (SAR) = 7.7; electrical conductivity (EC) = 0.8 dS/m; clay in soil = 52%

■ DESIGN OF EXPERIMENTS

- CHI Granule contained approx. 60% OM (55% humic acids) and 1.4 mm mean particulate sizing; applied on soil using a spreader in October 2015
- **Plot 1 (1.5 acres):** 0 lbs CHI Granule/acre (Control)
- **Plot 2 (1.5 acres):** 160 lbs CHI Granule/acre
- **Plot 3 (1.5 acres):** 400 lbs CHI Granule/acre
- Ten (10) soil samples were taken @ 15 cm depth/plot in October 2015, April 2016, and October 2016, and analyzed for moisture.
- Thirty (30) compaction readings were made @ 15 cm depth/plot in October 2015, April 2016, and October 2016.
- Statistical analyses were completed using Minitab® v.17 for means, standard deviations, ANOVAs ($p=0.05$), and Fisher's least significant differences ($\alpha = 0.05$).

■ RESULTS

CHI Granule at 400 lbs/acre slightly improved soil water retention. At both rates, CHI Granule significantly reduced soil compaction over control (up to 28% reduction). An application rate of 160 lbs/acre was found to be optimum. After 1 year at a high soil moisture level, the efficacy of CHI Granule was reduced.



CONCLUSIONS

CHI Granule at 160 lbs/acre significantly reduced the compaction of clayey soil. This product was practical, economical, and compatible with most nutrients.