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REPLENISHING EARTH'S ENERGY

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Field Test Results (Soil Compaction)-2016

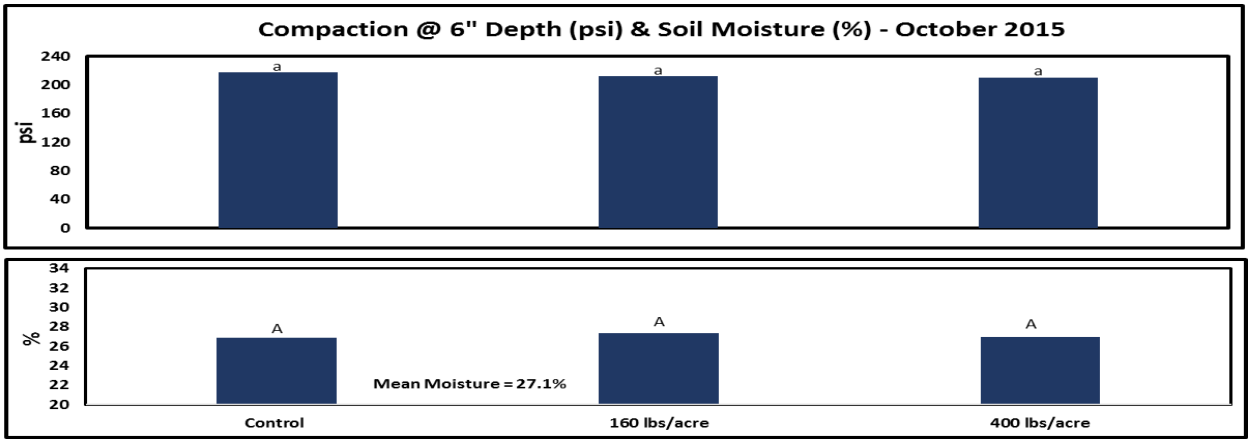
CHI Granule Reduced Soil Compaction

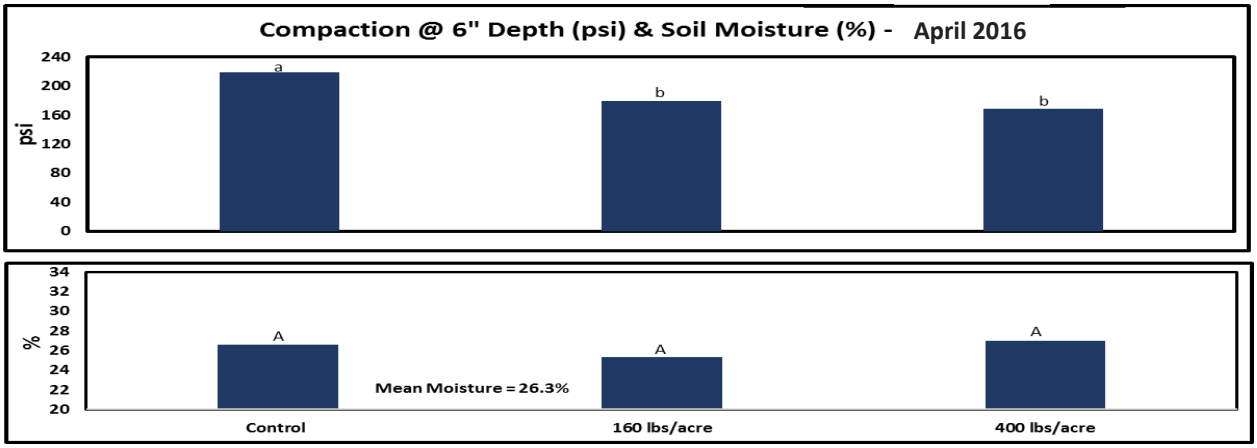
Objective:	*To use organic matter (humic acids) to reduce compaction of heavy clay soil*
Collaborator:	*AU Farms, Sturgeon County, Alberta, CANADA*
Period:	*October 2015 to October 2016*
Tested product:	*CHI Granule (source of humic acids)*
Tested crop:	*None*
Location:	*Sturgeon County, Alberta, CANADA*
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%*

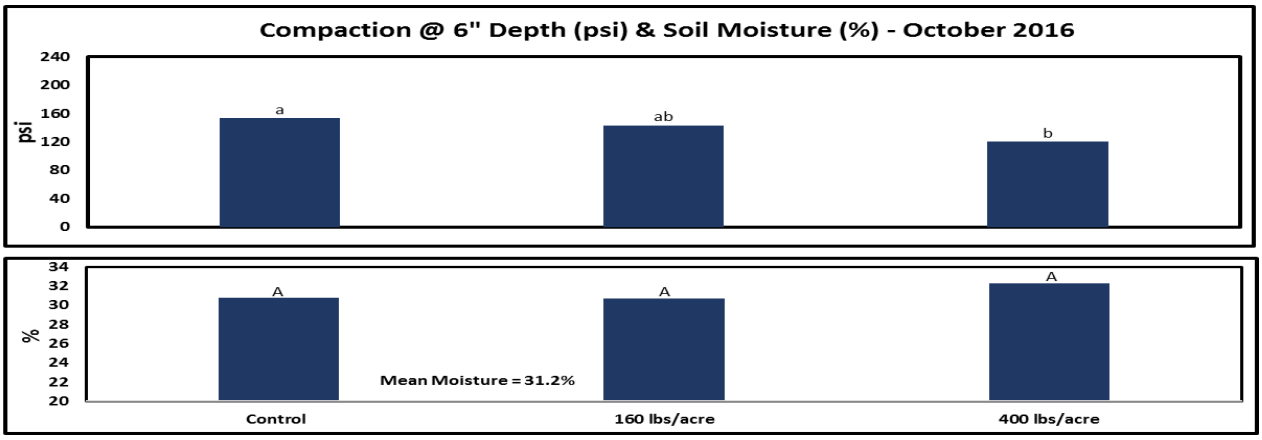
Design of Experiments

- *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 (α = 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.