

EFFECTS OF DIFFERENT APPLICATION RATES OF HUMIC ACID FROM HUMALITE ON GERMINATION AND GROWTH OF WHEAT: A GREENHOUSE STUDY



INVESTIGATOR

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OBJECTIVE(S)

To investigate response of wheat plants to different application rates of humic acid (extracted from Humalite) on soils from Vulcan, Alberta.

CERTIFICATIONS

Black Earth Humic products are:

- » Listed by OMRI
- » Registered with CFIA
- » Certified for use for NOP
- » Certified by the CDFA



EXPERIMENTAL CONDITIONS

Crop Variety: Wheat (*Triticum aestivum* var. Stanley)

Location: Ryley, Beaver County, Alberta

Test Period: May-September 2014

Soil Properties: SOM (2.74%), pH (8.0), EC (0.23 dSm⁻¹), available nutrients (mg/kg): ammonium N (3.2), nitrate N (9.9), P (14.6), K (276), S (23.2), loam texture

Treatment(s): A 12% HA Organo Hume at: (a) 0 gal/ac (H0 or control), (b) 1.0 gal/ac (H1), (c) 5.0 gal/ac (H5) and (d) 10.0 gal/ac (H10)

Experimental Design: Completely randomized design with seven (7) replication; each replicate was a 10 L pail containing ca. 12 kg soil adjusted to 50% field capacity

Planting Details: All pails received basal application of N&P at 60 lbs N + 25 lbs P per acre; twenty wheat seeds were sown at 3.0 cm depth and, one week after sowing, thinned out to four seed per pail. Treatments were applied at sowing and 24 days after sowing (DAS).

Parameters Measured: Germination (%), seedling height (cm), shoot and root biomass (g/pail), soil parameters



Untreated
(0% ha)

1 gal/ac
(12% ha)

5 gal/ac
(12% ha)

10 gal/ac
(12% ha)

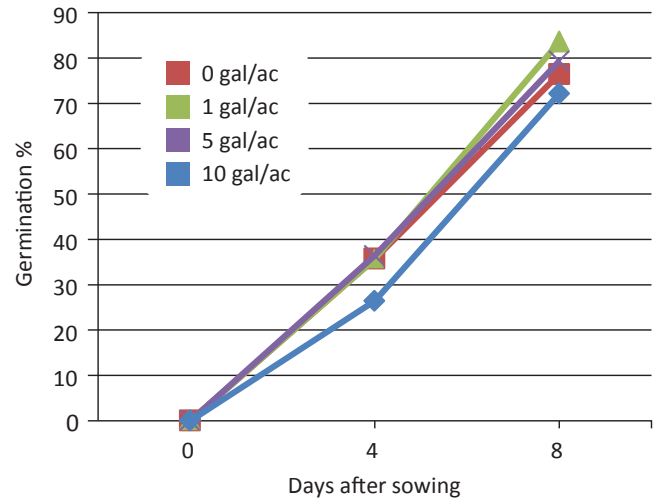
RESULTS

- » H5 improved germination (over control) by 2% at 4 DAS while H1 improved G% by 9.4% at 8 DAS (Fig. 1).
- » Seedling height at 8 DAS and 39 DAS was 4.5% and 10.4% higher for H5 and H1, respectively (Fig. 2).
- » There was an increase by 24.7% in shoot biomass (due to H1), 86.1% in root biomass (due to H5) and 57.0% in total biomass (due to H1) (Fig. 3).

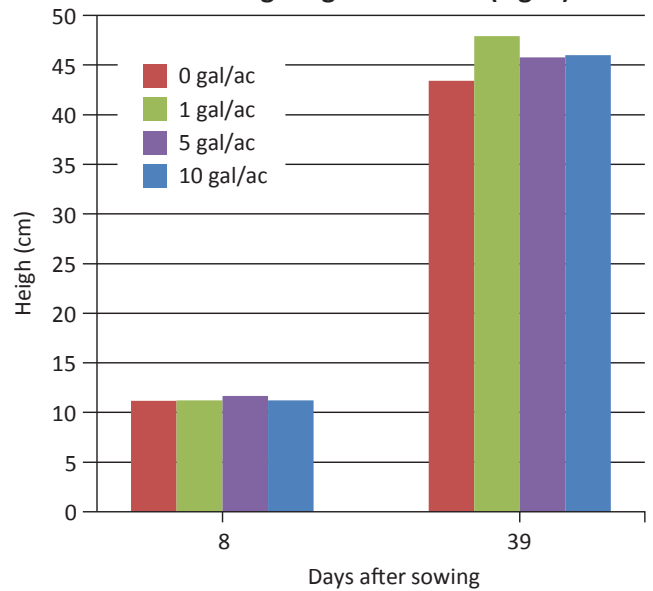
CONCLUSION

A one (1.0) gal/ac of 12% HA applied twice (at planting and during the growth stage) is an optimum rate for wheat and rates should not exceed 5.0 gal/ac.

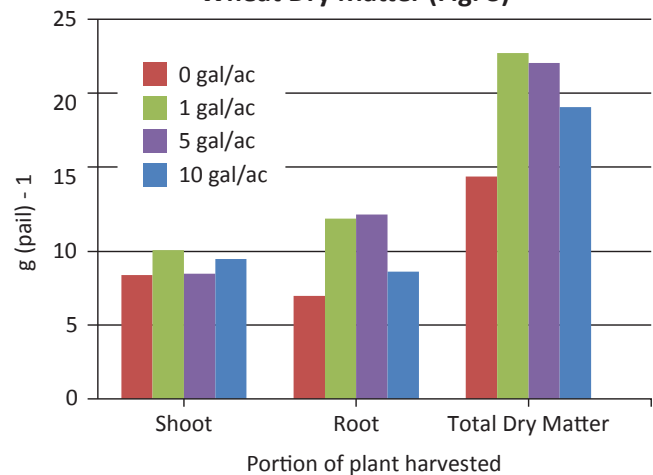
Germination of Wheat (Fig. 1)






Seedling Height of Wheat (Fig. 2)



Wheat Dry Matter (Fig. 3)



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