

Cotton Precision Planter Technology

Pedro Andrade and John Heun



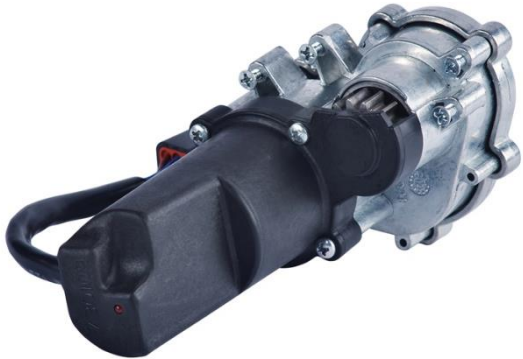
University of Arizona - Extension Virtual Tent Talks, 8/19/2020

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A. Variable-speed drive for seed metering



B. Additional downward force



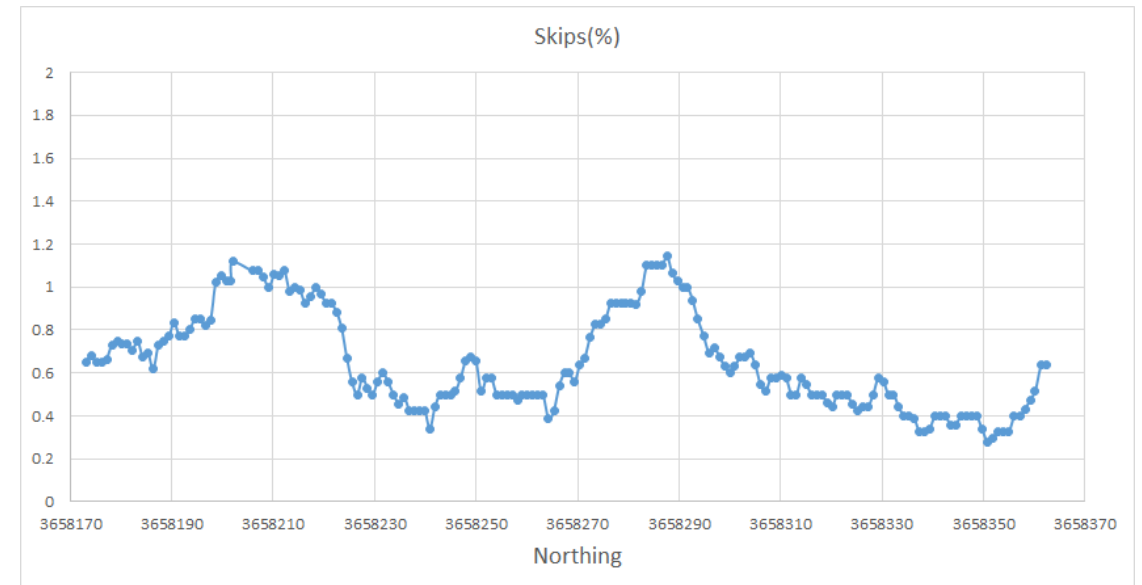
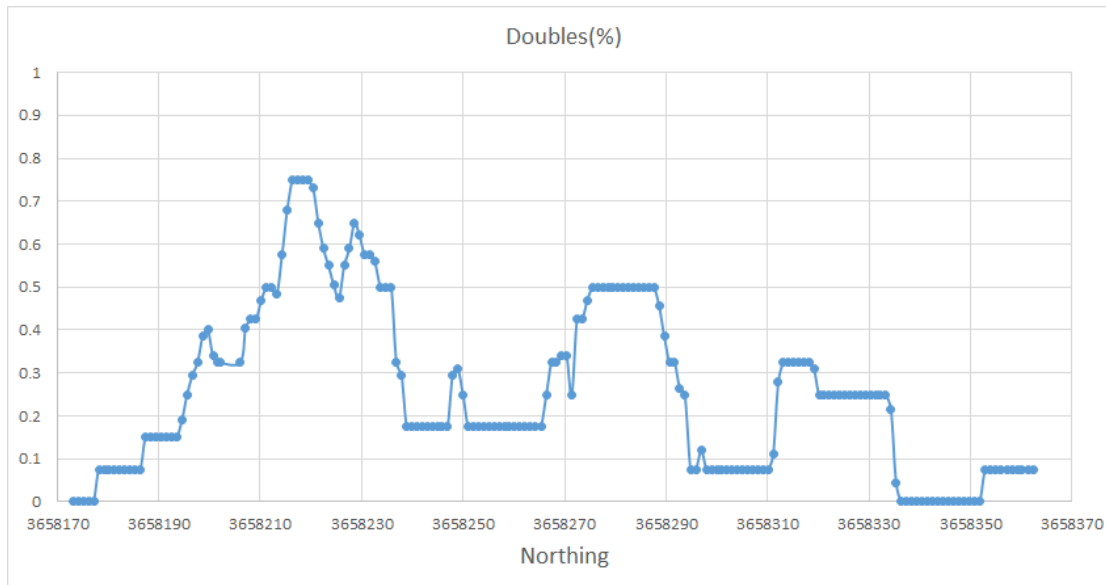
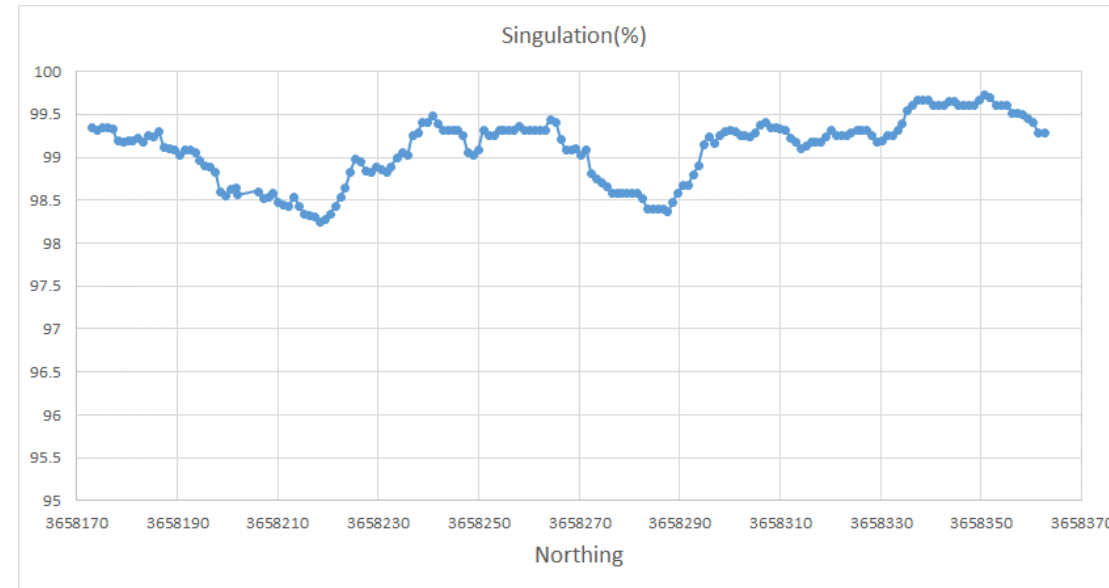
C. Auxiliary equipment



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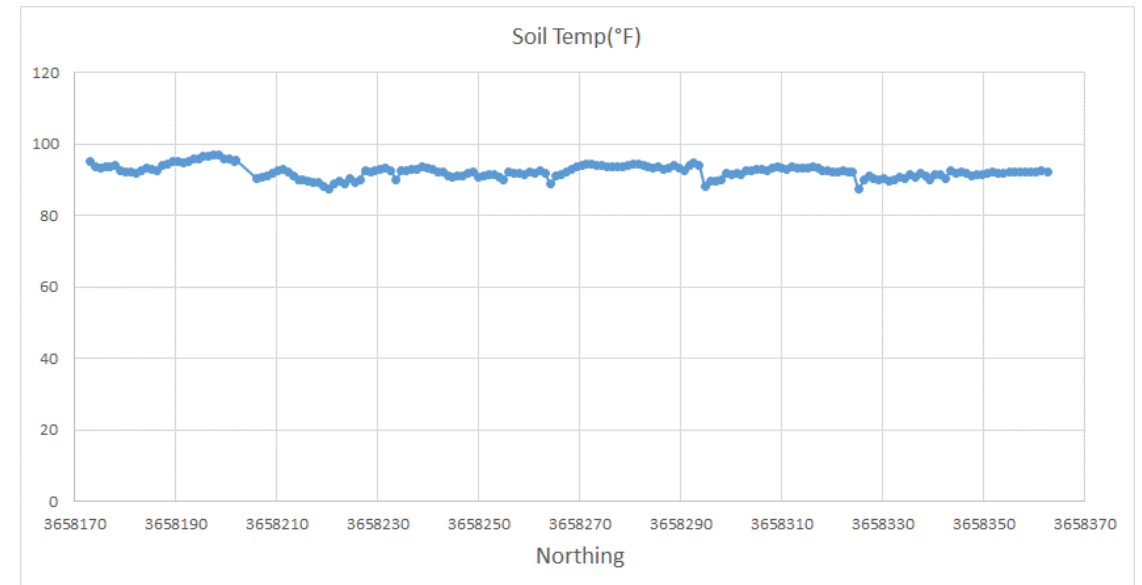
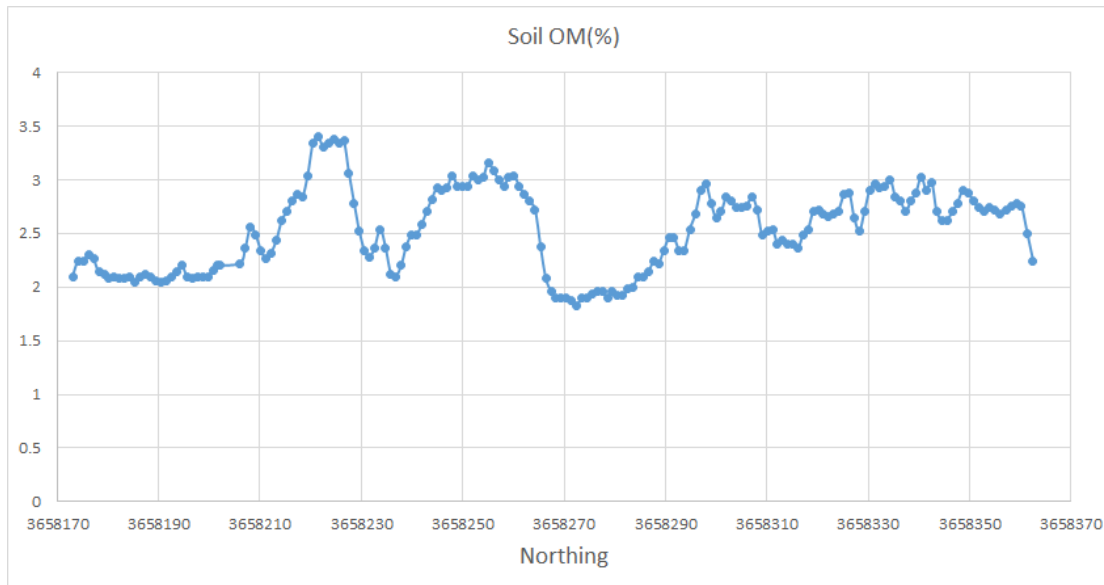
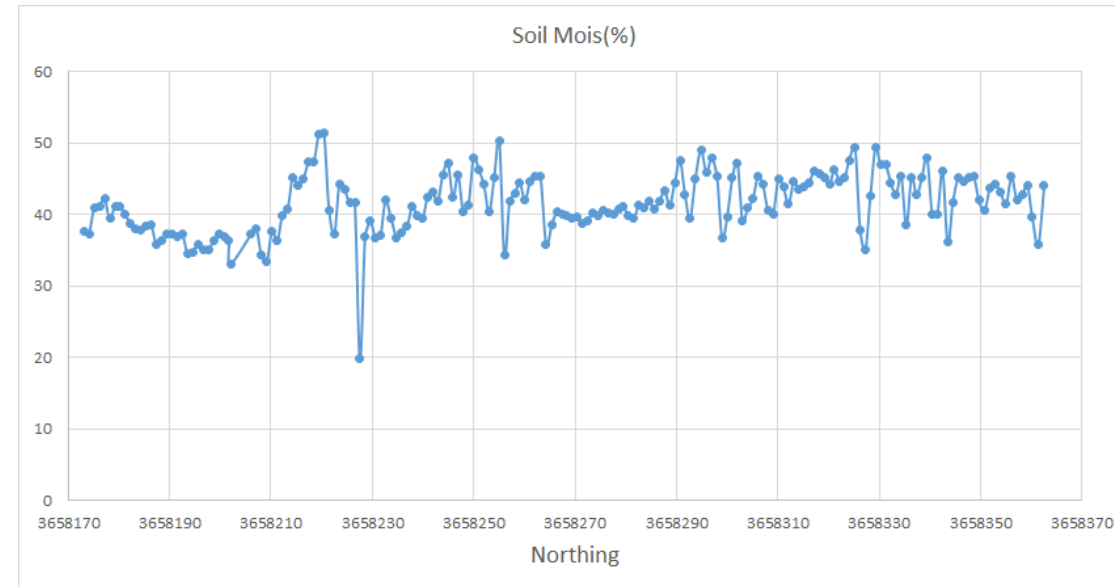
Seed tube sensor feedback



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Seed firmer sensor feedback



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2020 Cotton season - Field testing of planter settings and seed-bed soil strength conditions

- Randomized experiment with four replications
- Experiment repeated in two fields of contrasting soil texture

1. Record seed delivery and distribution

2. Test effect of soil compaction at the time of planting

3. Test the effect of downward force



Seedling emergence

Vegetative growth

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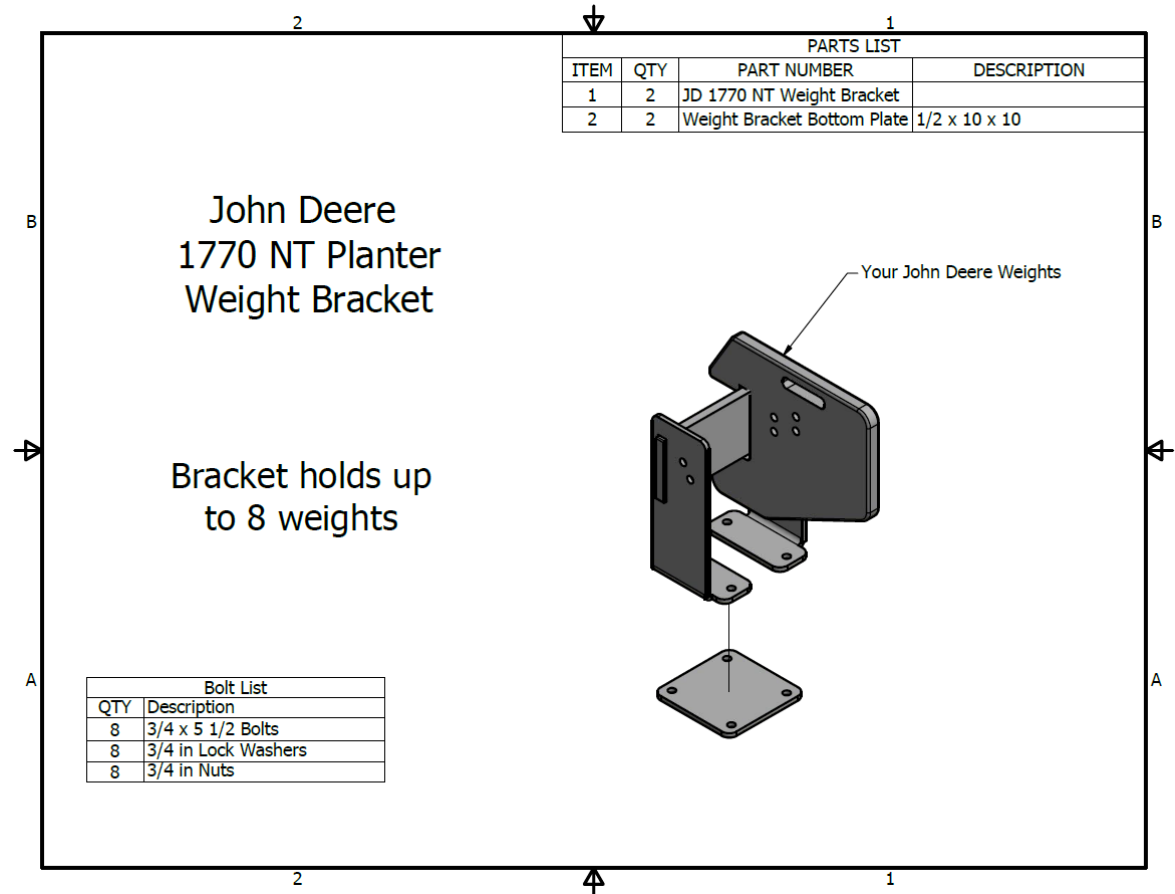
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Planter settings and
Soil seed-bed conditions



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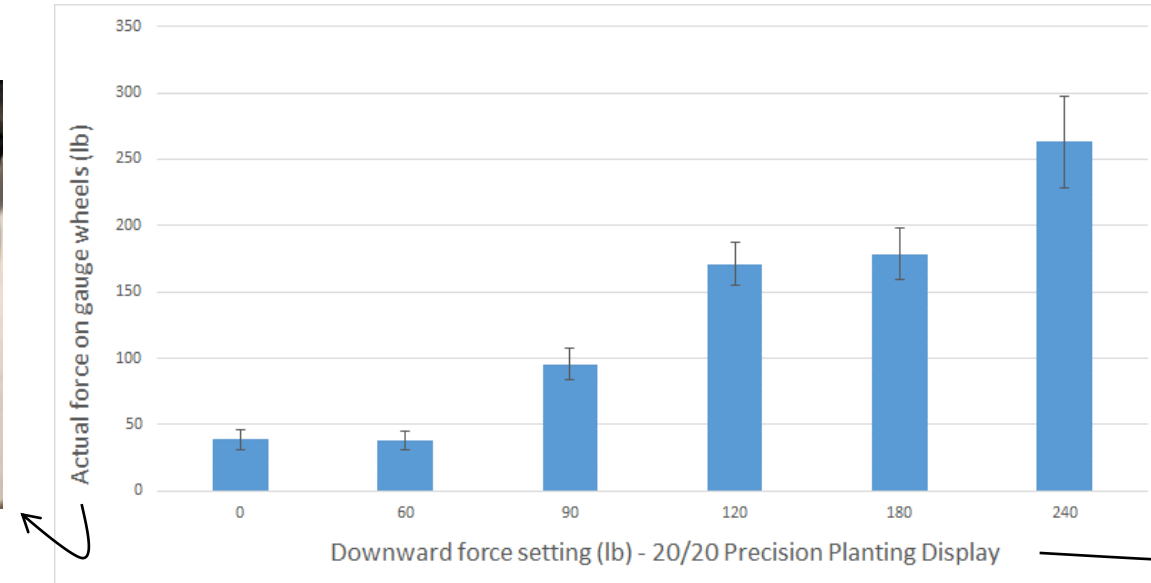
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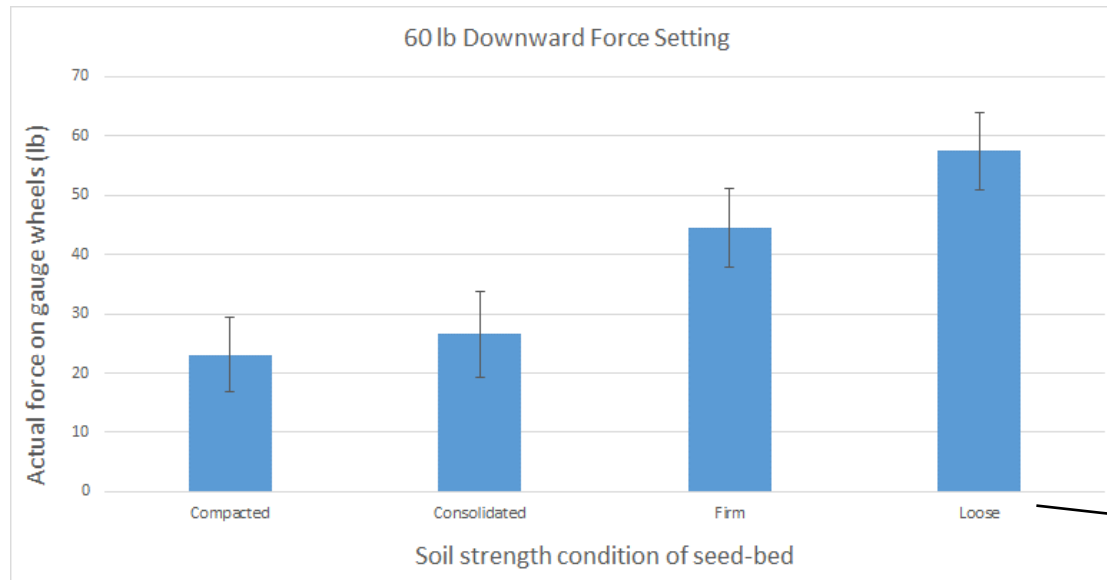
Force transducer feedback



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Force transducer feedback

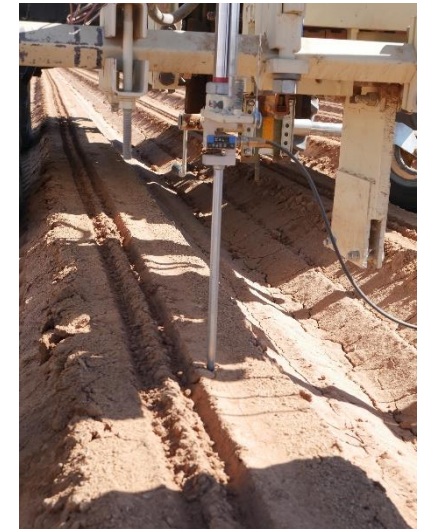


“Compacted” = 48.5 psi (Cone Index)

“Consolidated” = 36.9 psi

“Firm” = 28.9 psi

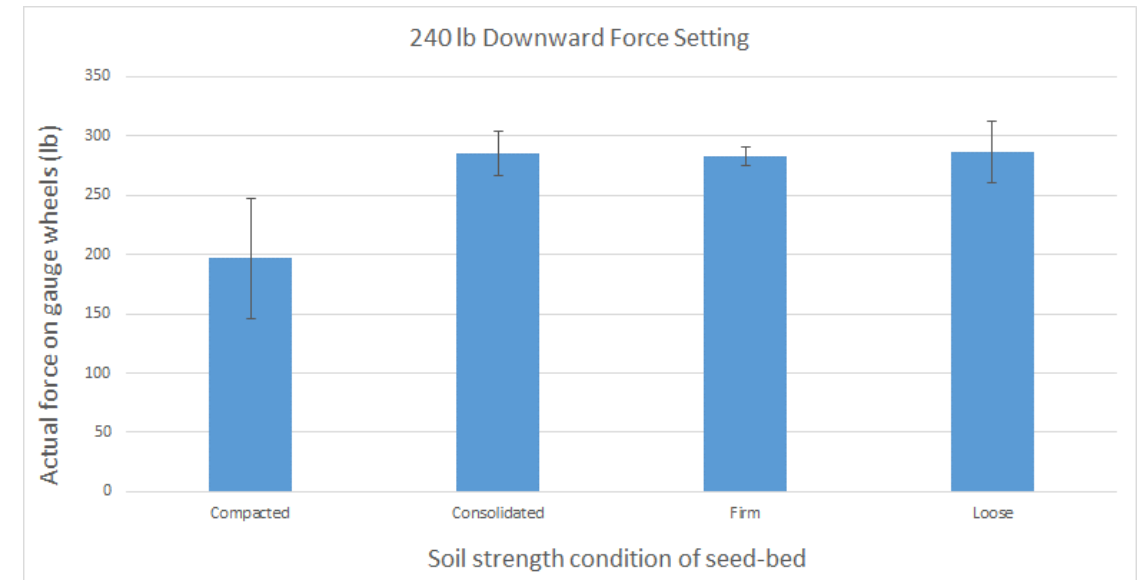
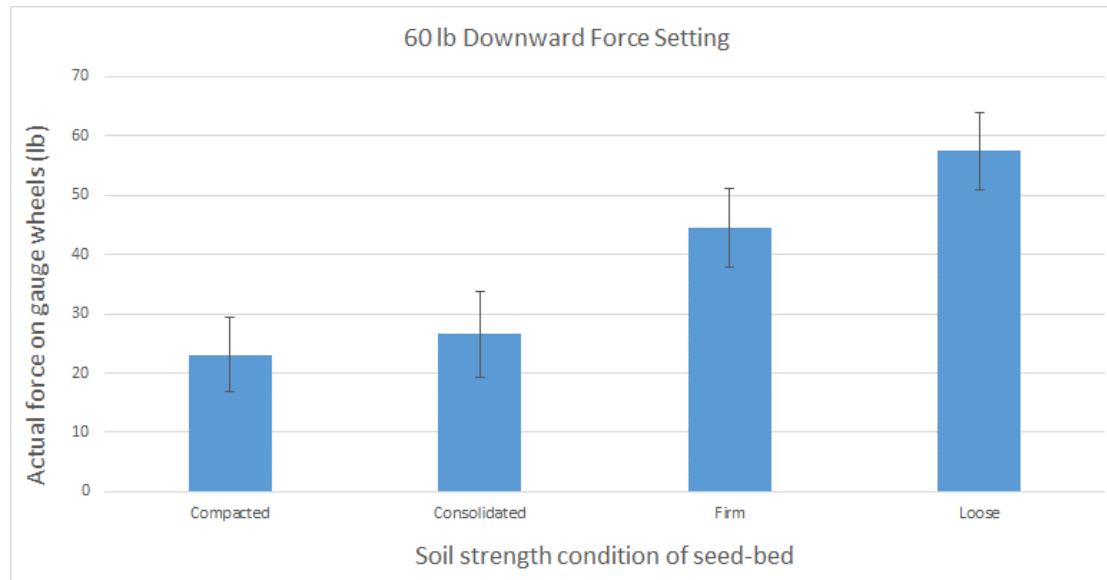
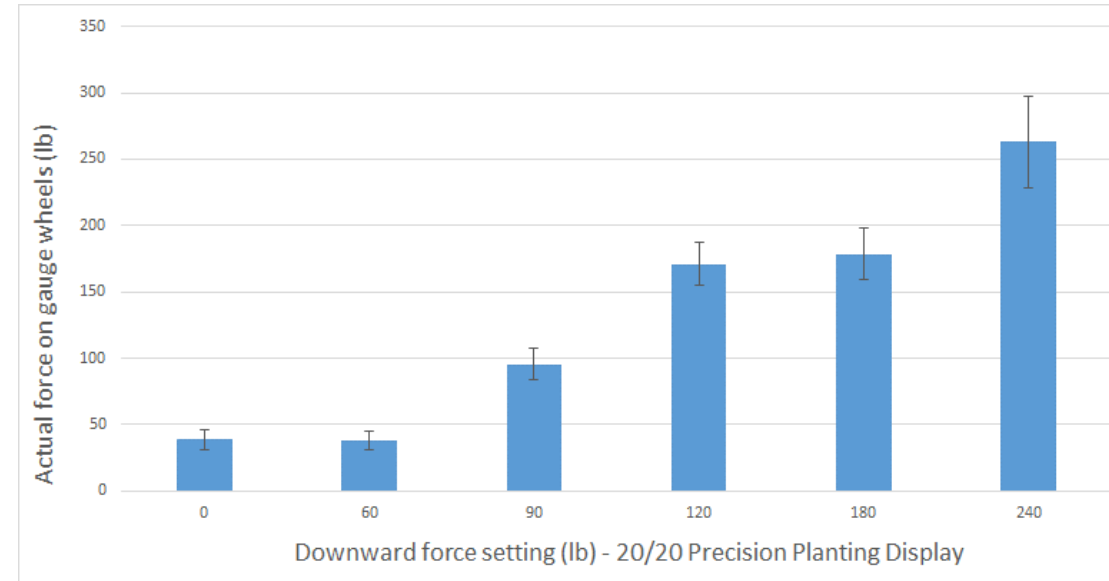
“Loose” = 19.5 psi



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Force transducer feedback



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Effect on crop stand count

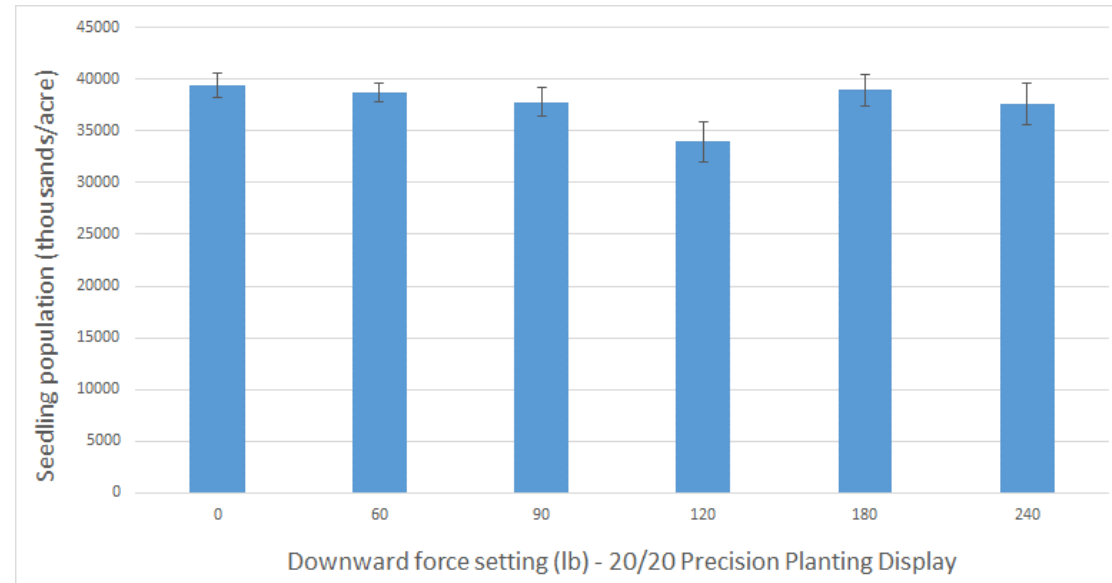


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Effect on crop stand count

37 DAP

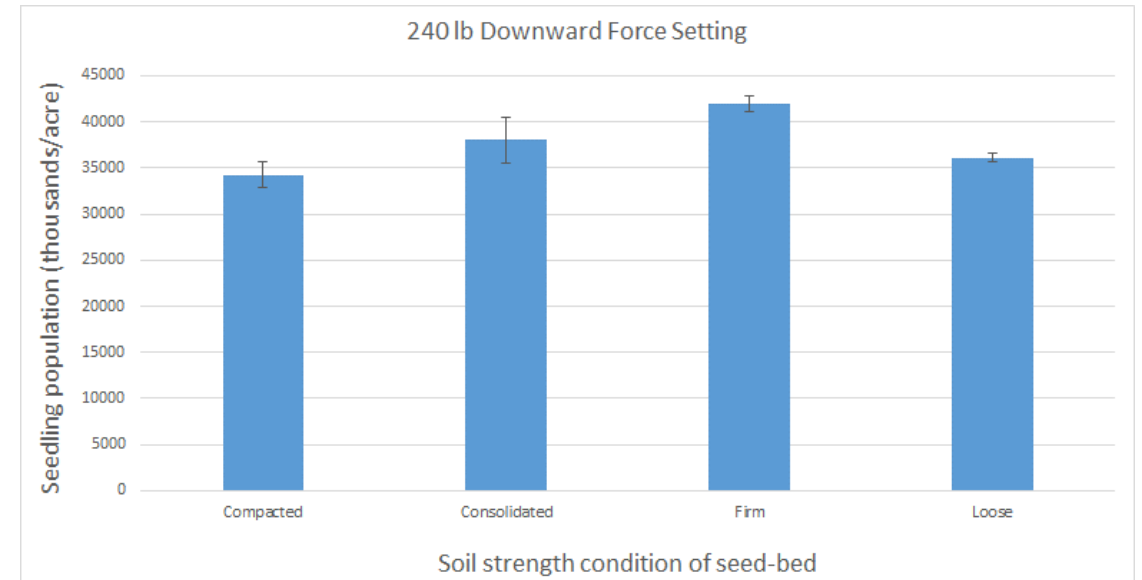
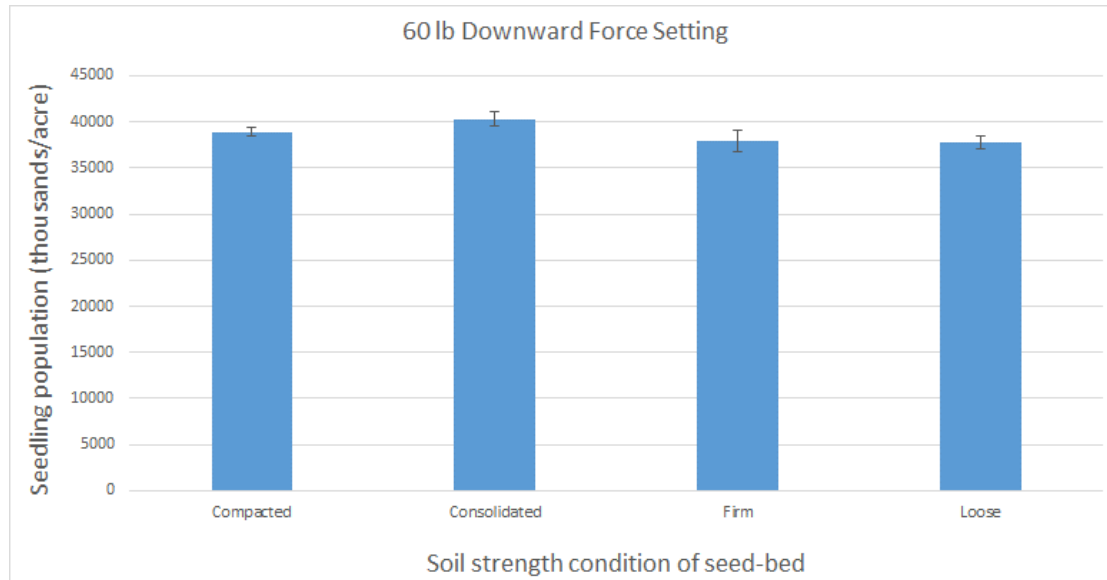
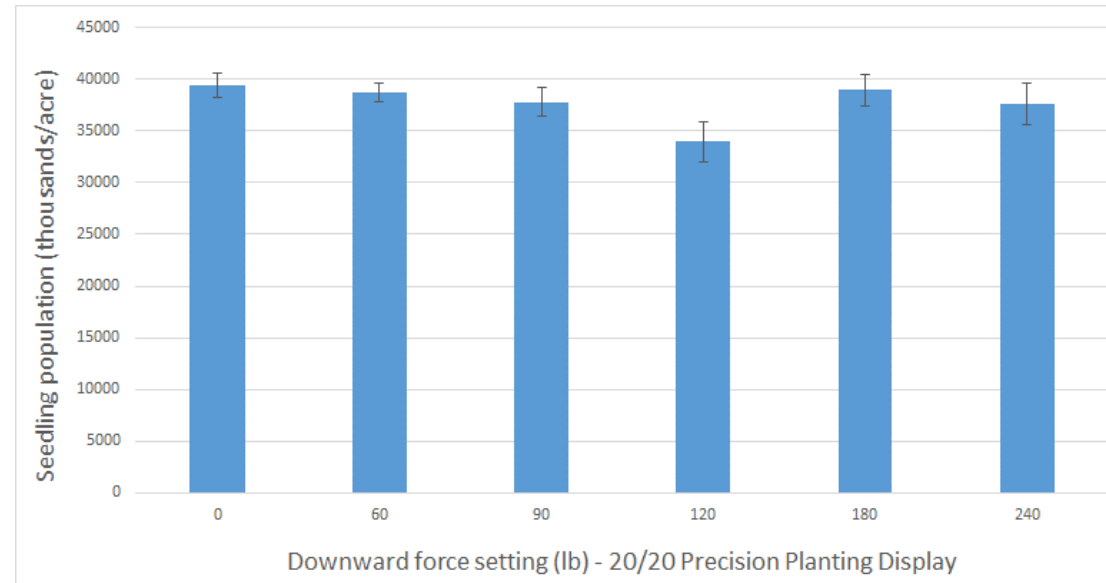


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Effect on crop stand count

37 DAP



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Effect on vegetation

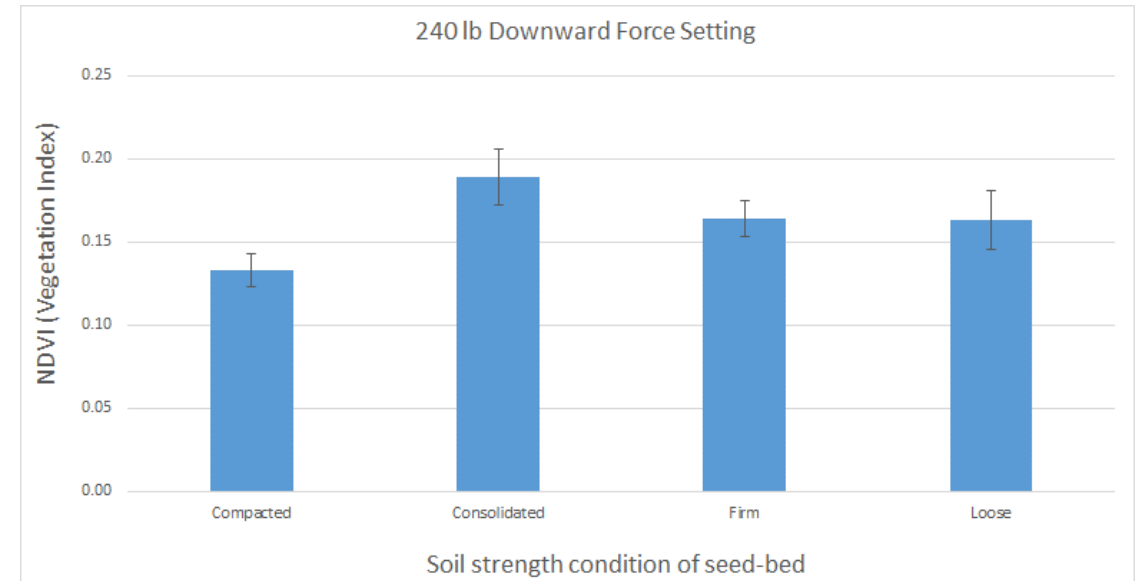
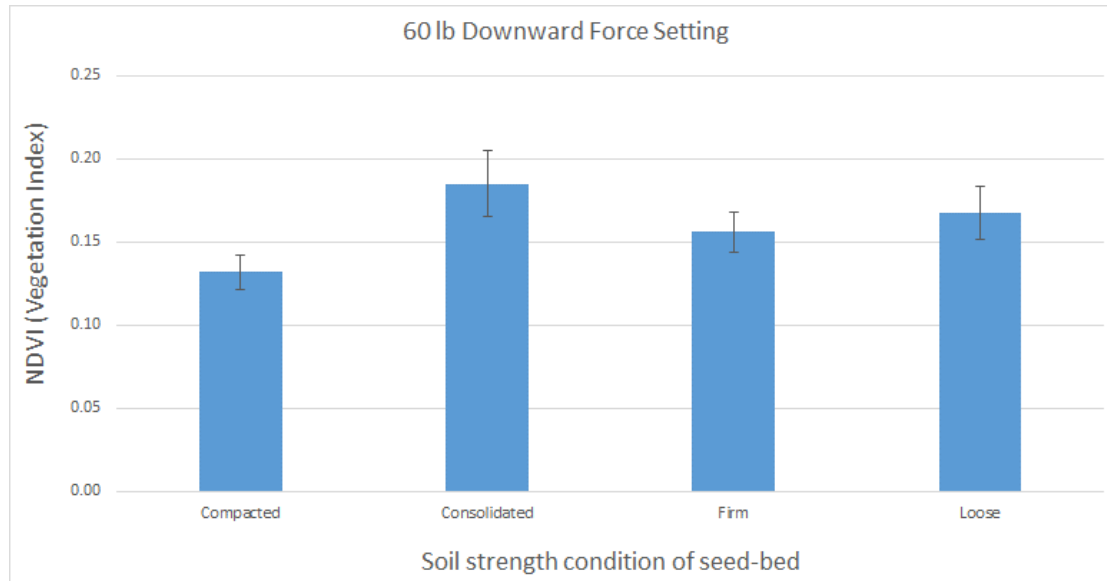
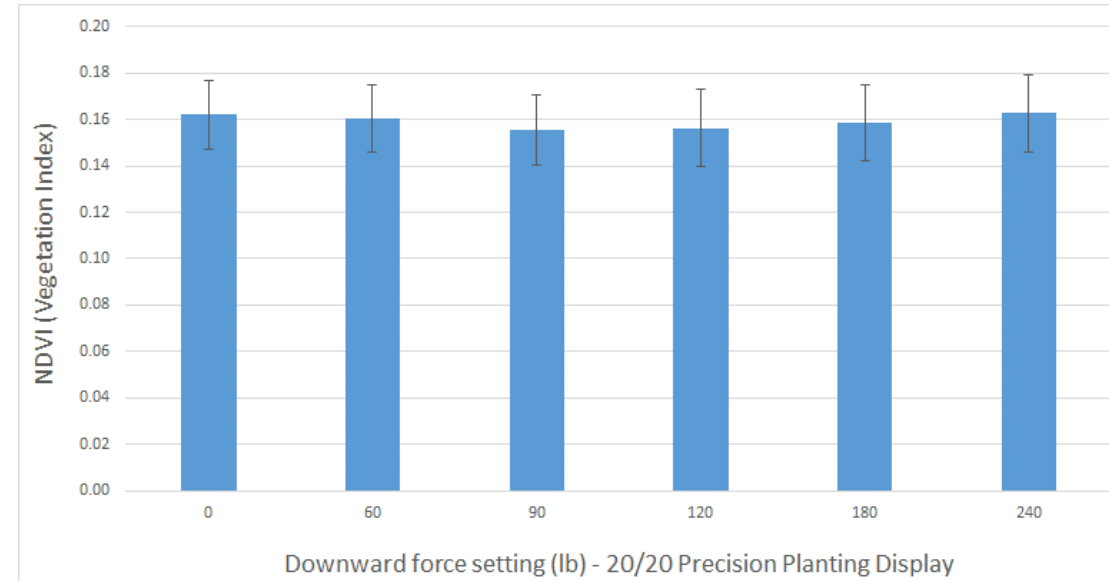


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Effect on size of vegetation

38 DAP

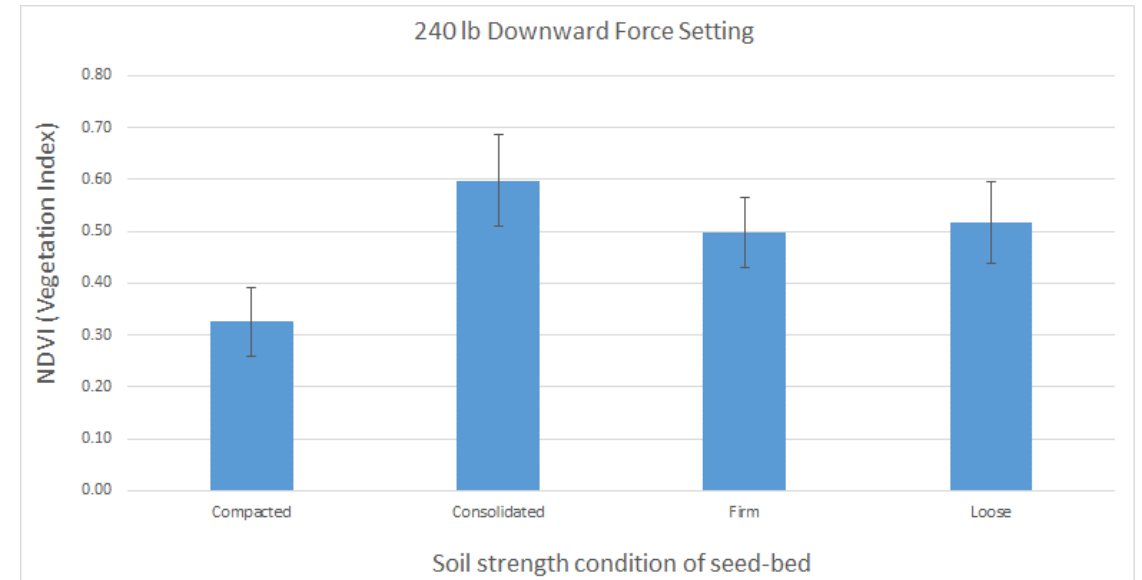
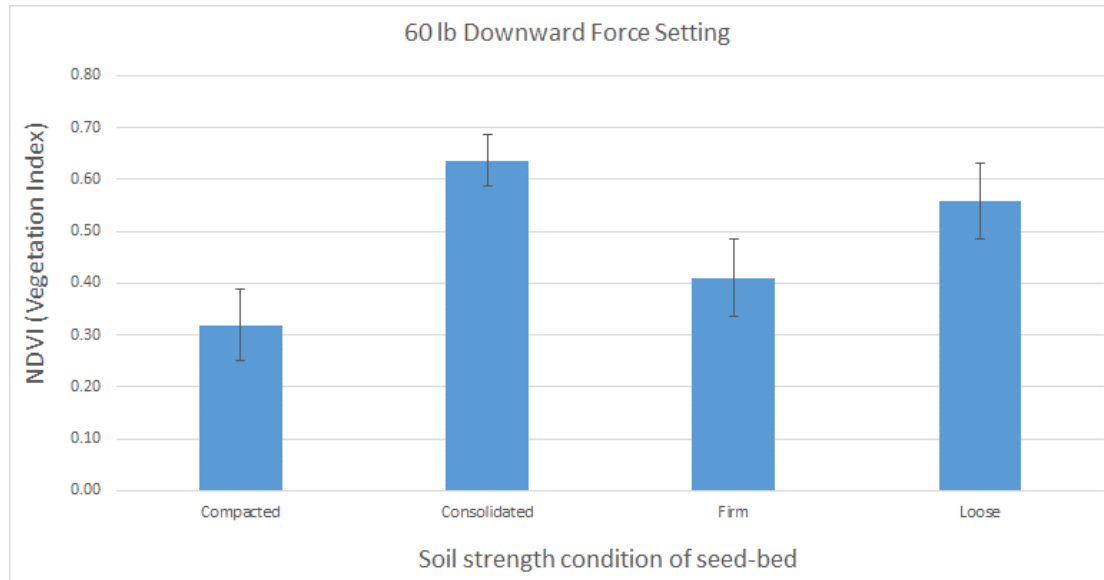
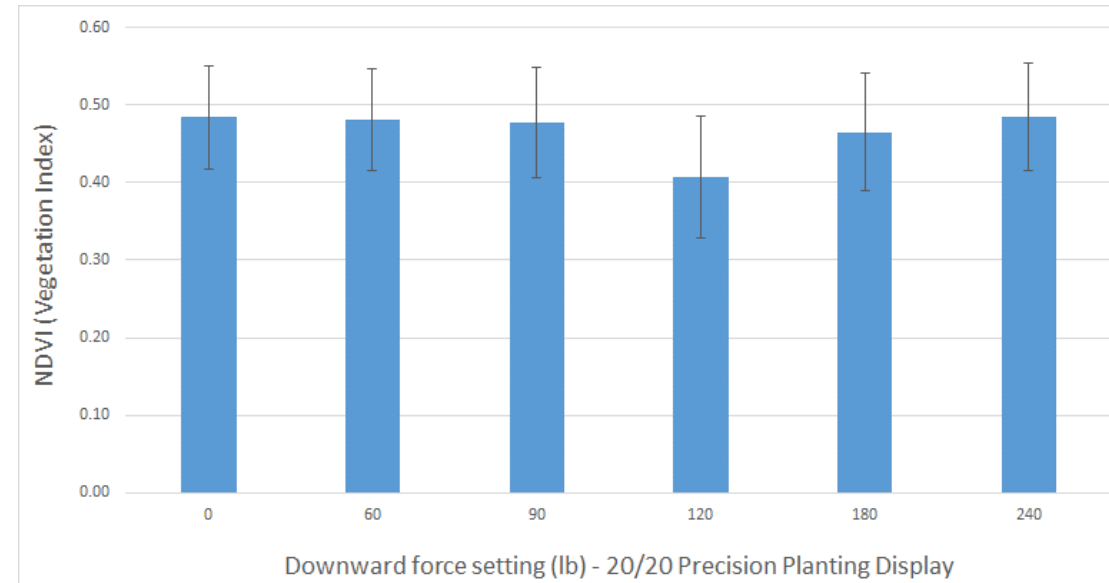


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Effect on size of vegetation

56 DAP



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Thanks for your attention!

Special Recognition to:

CottonInc

Precision Planting LLC