

Bio-Stimulants In Dry Beans

Jemmett Consulting and Research Farm LLC.

Purpose

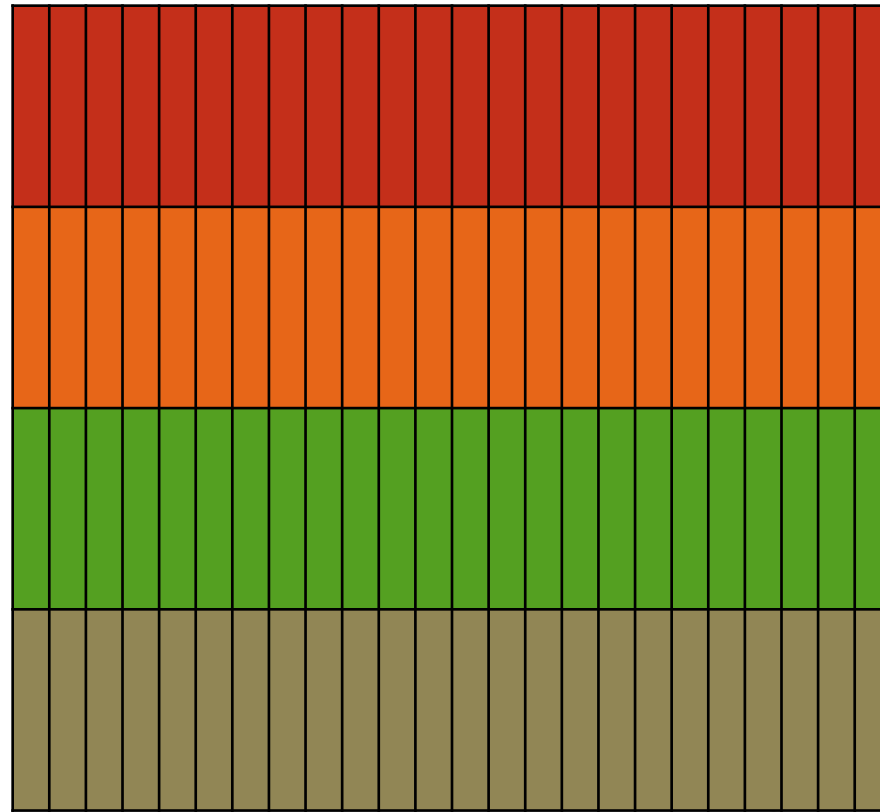
- ▶ Answering grower questions
 - ▶ What are Bio-Stimulants?
 - ▶ Why are Bio-Stimulants needed?
 - ▶ What is the difference between all the products?
 - ▶ Do Bio-Stimulants increase yield, quality, etc.?
 - ▶ So many to choose from, how do I know what is right for my operation?

Introduction

- ▶ Bio-Stimulant types
 - ▶ Plant Food (other than synthetic fertilizers)
 - ▶ Live soil organism addition
 - ▶ Break down nutrients for uptake by the plant
 - ▶ Mycorrhizal root colonization
 - ▶ Soil organism stimulant or food
 - ▶ Promotes natural populations

Trial Design

- ▶ Randomized Complete Block Design (RCBD)
- ▶ 7.33ft (88 inches) x 35ft plot area
- ▶ 4 Replications
- ▶ Trial to be conducted for 3 years



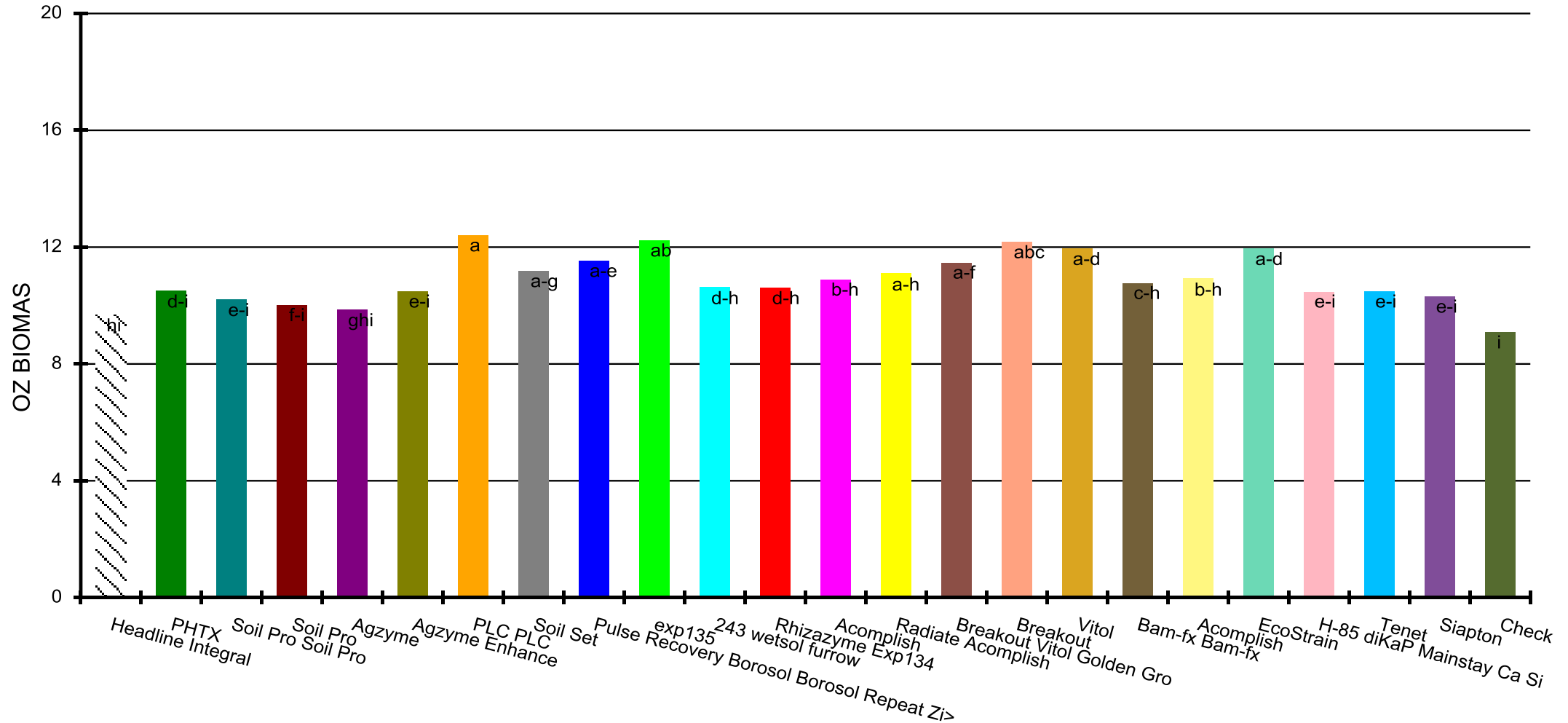
Application Timings

- ▶ (A) Pre plant
- ▶ (B) 100% emergence
- ▶ (C) 30 DAE
- ▶ (D) Pre bloom
- ▶ (E) 10% bloom
- ▶ (F) 100% bloom
- ▶ (G) Pod fill

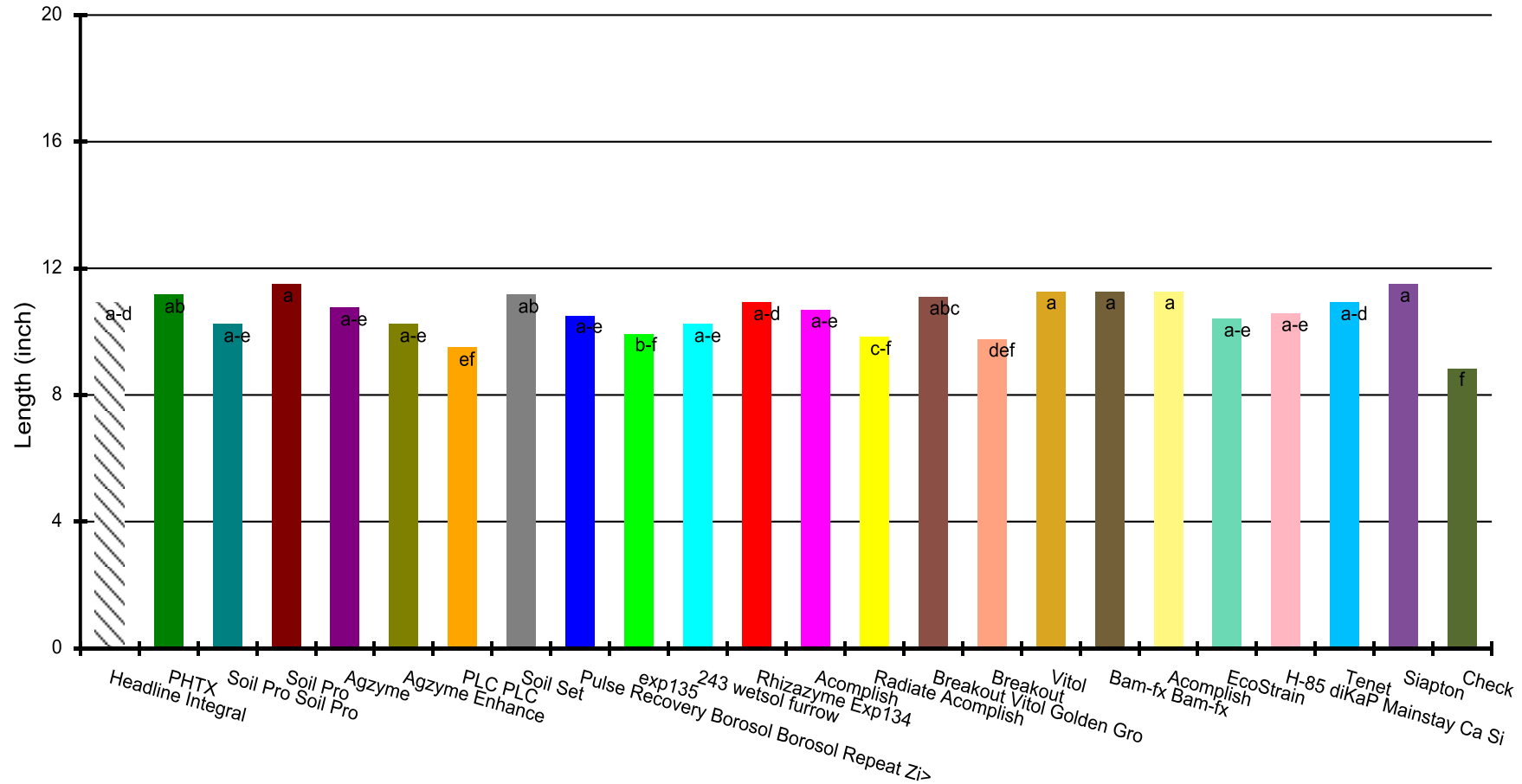
Data Collection

- ▶ % Injury
- ▶ Stand Counts
- ▶ Root Lengths
- ▶ % Nodulation
- ▶ Plant Health
- ▶ Whole Plant Biomass
- ▶ Yield

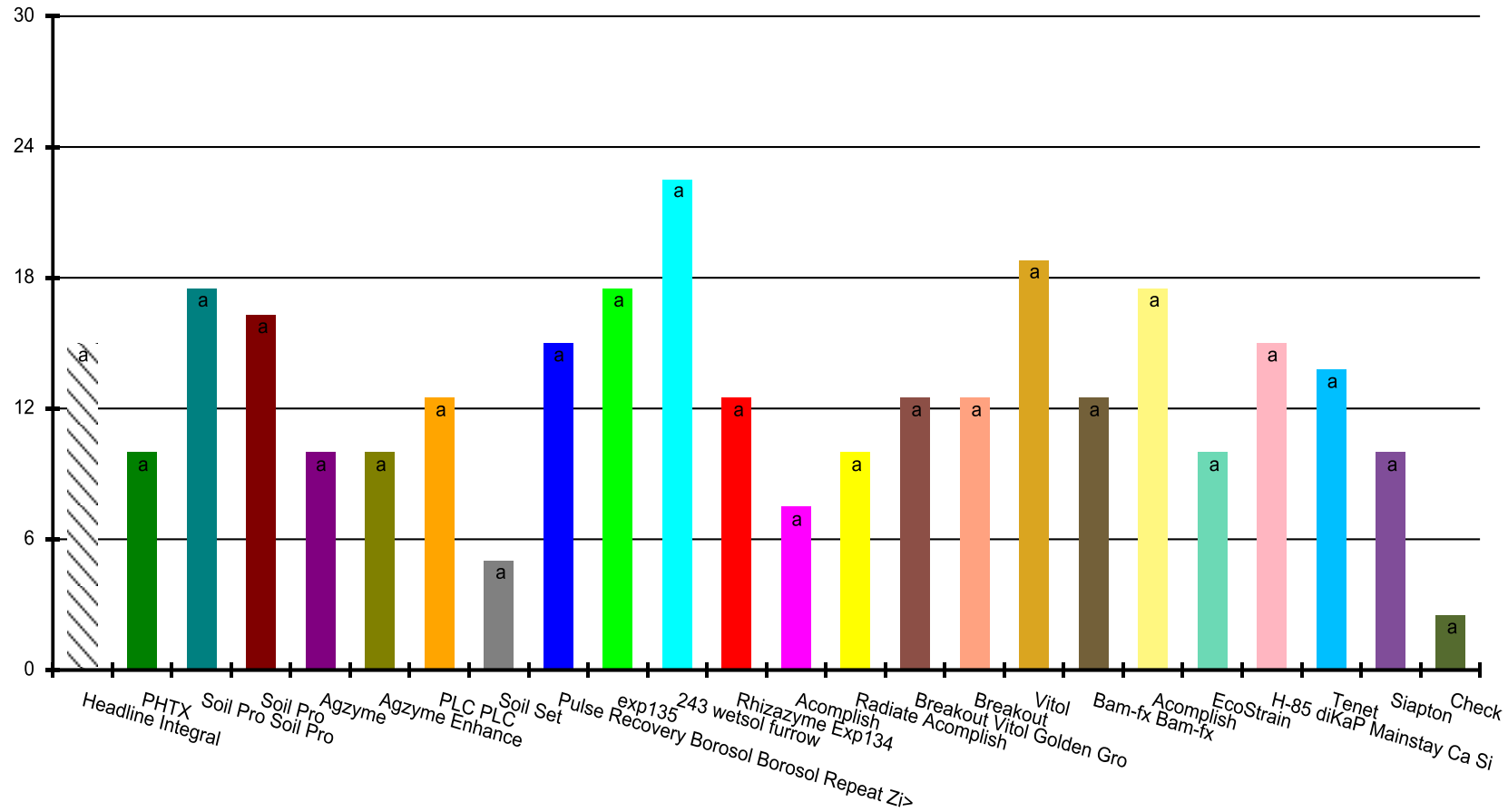
Biomass



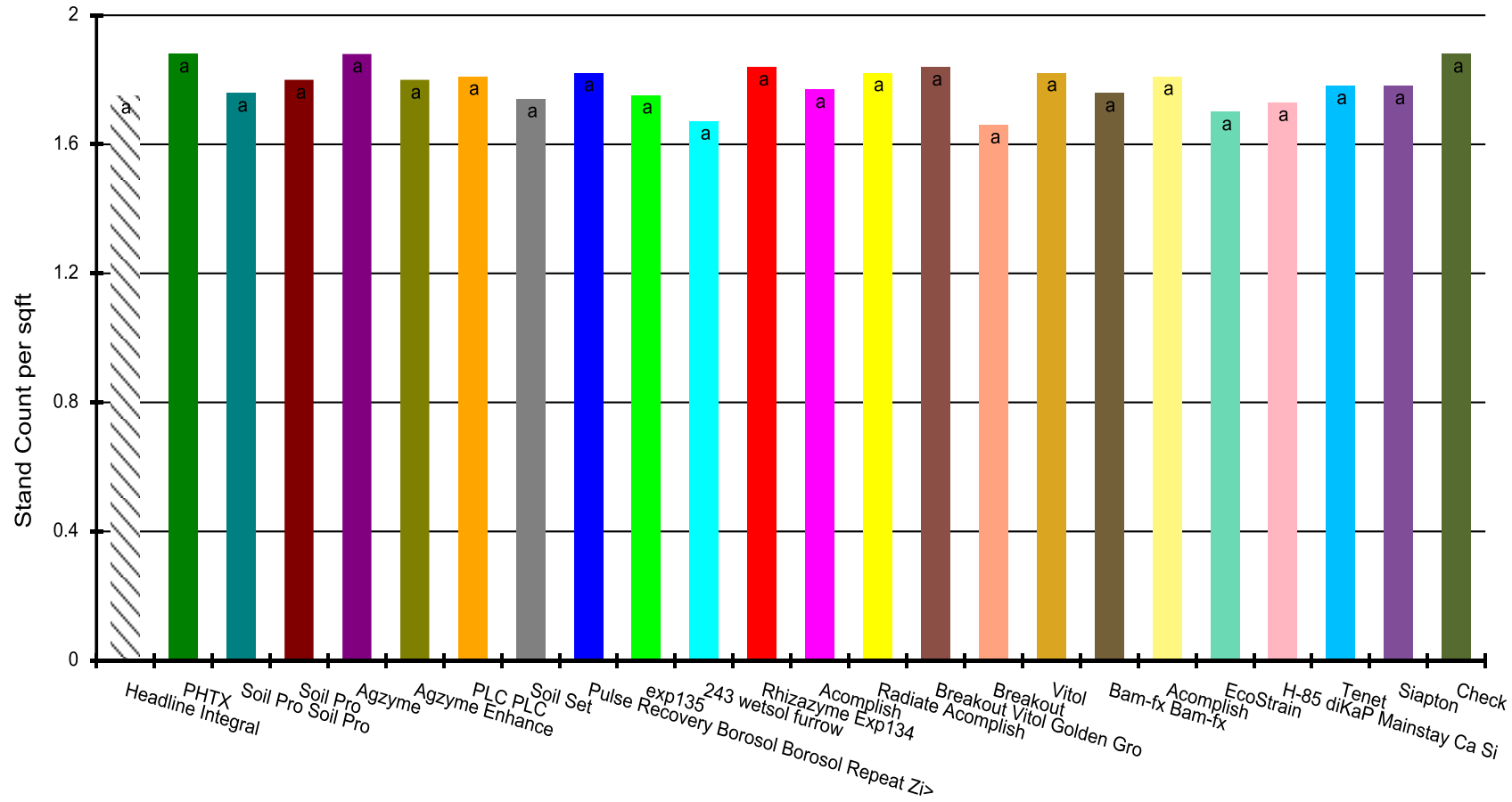
Root Length



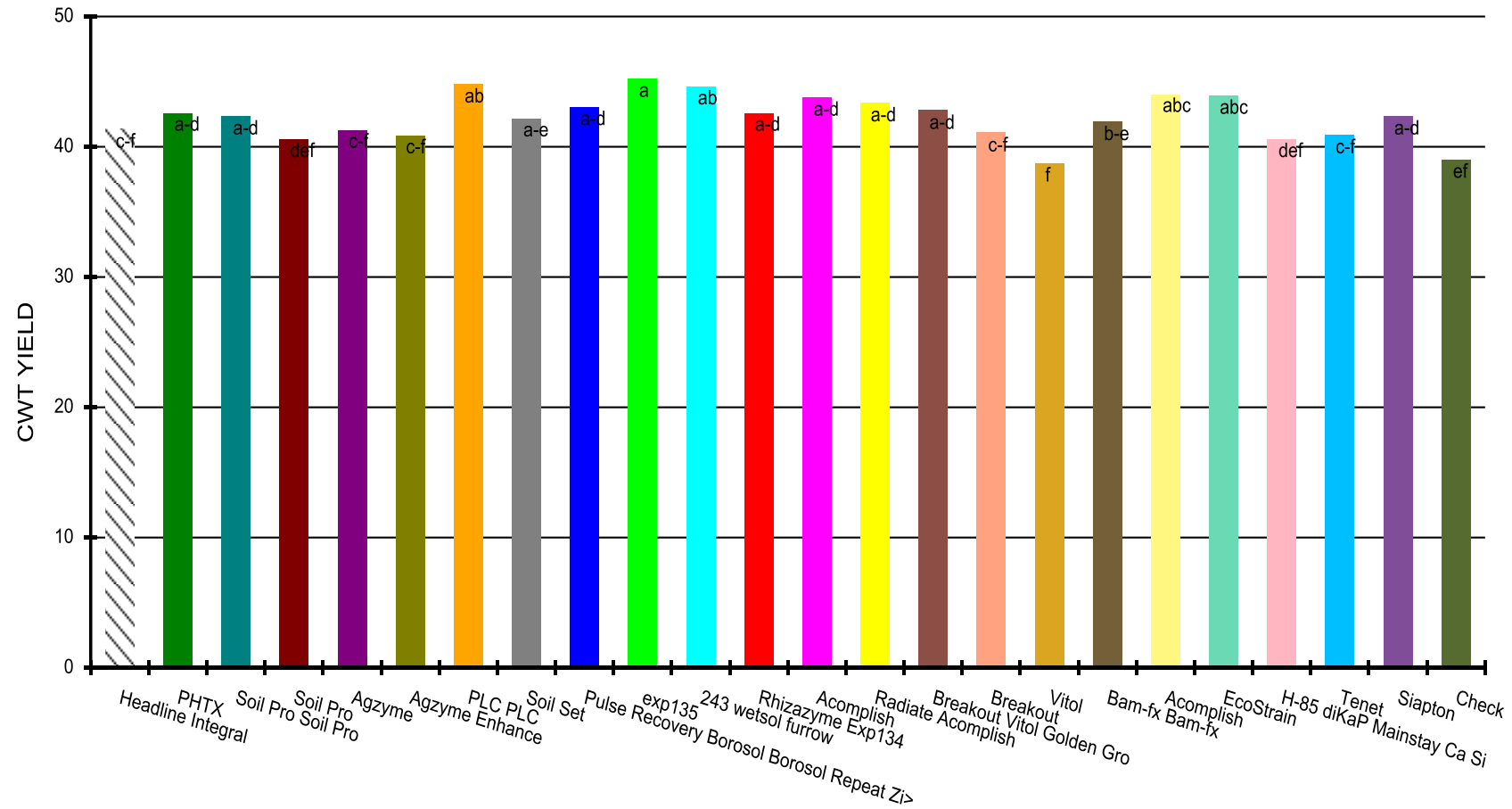
% Nodulation



Stand Count



Yield



Conclusion

- ▶ Can increase yield
 - ▶ No injury
 - ▶ No visible plant health differences
 - ▶ Possible increase benefit in nodulation
 - ▶ Can Increase in biomass
 - ▶ Increase in Root health.
 - ▶ No difference in Stand
- ▶ Questions?
 - ▶ At what point does it make sense to add a biologic product to your field?
 - ▶ Can I reduce inputs to cover the cost?
 - ▶ What can continued use do for me?

Modifications

- ▶ Soil Fertility
- ▶ Harvest sample size
- ▶ Root length and Nodulation Sample number
- ▶ Quality and Clean out samples

Questions? Requests?

Thank you to all the cooperators.