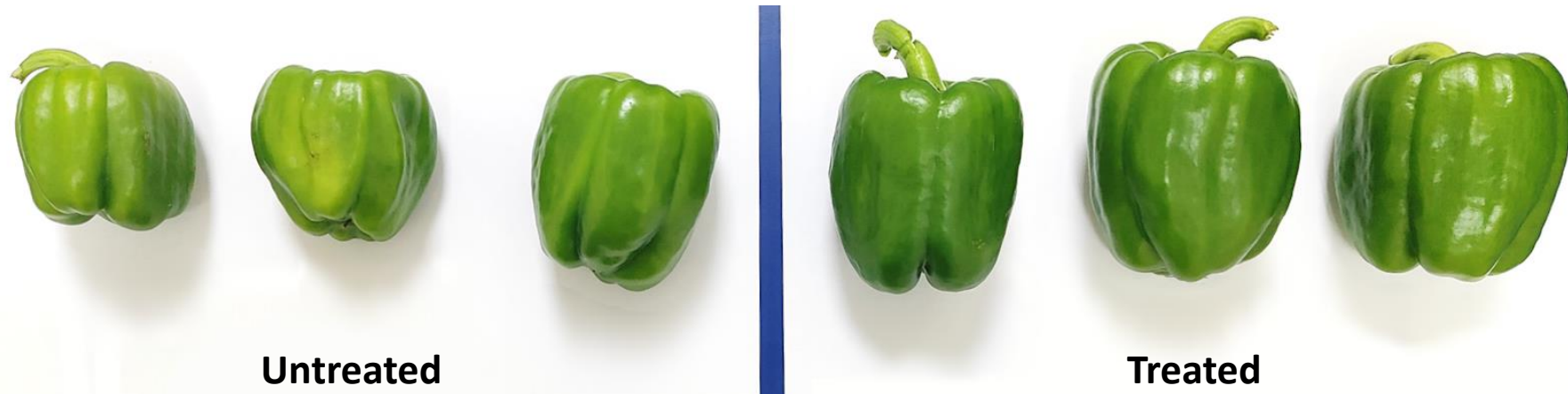




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Peppers, Bell – India – Centurion University – 2025



Collaborative Research Project

by

Centurion University of Technology and Management, Odisha, India

and

Harvest Harmonics International Corporation, Florida, USA



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Shaping Lives...
Empowering Communities...



Dr. Ashirbachan Mahapatra

Installation in a Centurion University Vegetable Field



Date of installation
10 Dec. 2024



18° 48' 14" N 84° 07' 43" E 94 m




← Dr. Ashirbanchan Mahapatra



Bell pepper with Drip and Polythene Mulch System

Bell pepper observation parameters

1. Plant height
 2. Dry matter accumulation
 3. Number of days to 50% flowering
 4. Number of days to 50% maturity
 5. Number of fruits per plant
 6. Fruit weight
 7. Yield per plant
 8. Total Chlorophyll
 9. SPAD reading
 10. Fruit colour (Visual observation)
 11. Shelf life
 12. Nitrogen content
 13. Phosphorous content
 14. Potassium content
 15. pH of soil
 16. EC
 17. *Fruit Quality (biochemical) Analysis*
- 
- Soil & Fruit*



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Peppers, Bell – India – Centurion University Harvest Harmonics' Analysis

Preliminary 2025-02-07

This is an analysis of preliminary bell pepper trial results, as presented to Harvest Harmonics Science Department on 3 Feb.2025 by Dr. Ashirbachan Mahapatra.

TIME

- Planting Date: 10 Dec. 2024
- Date of measurements & photos: ~1 Feb. 2024

LOCATION

- Place: Centurion University experimental field, Jhola, Odisha, eastern India
- Field coordinates: 18.803926, 84.128566

DETAILS

- Crop: Bell pepper
- Irrigation and setup: Drip irrigation in a polythene mulch system





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Control

After about three weeks of growth, the first observation that was made was that the canopy coverage is bigger.

We don't have the exact measurements of canopy width yet, but as can be seen in the photos, KPCB canopy is about twice as big as Control, with much bigger, greener leaves.

According to measurement with a Soil Plant Analysis Development (SPAD) chlorophyll meter, the leaves were 9% greener.



KPCB



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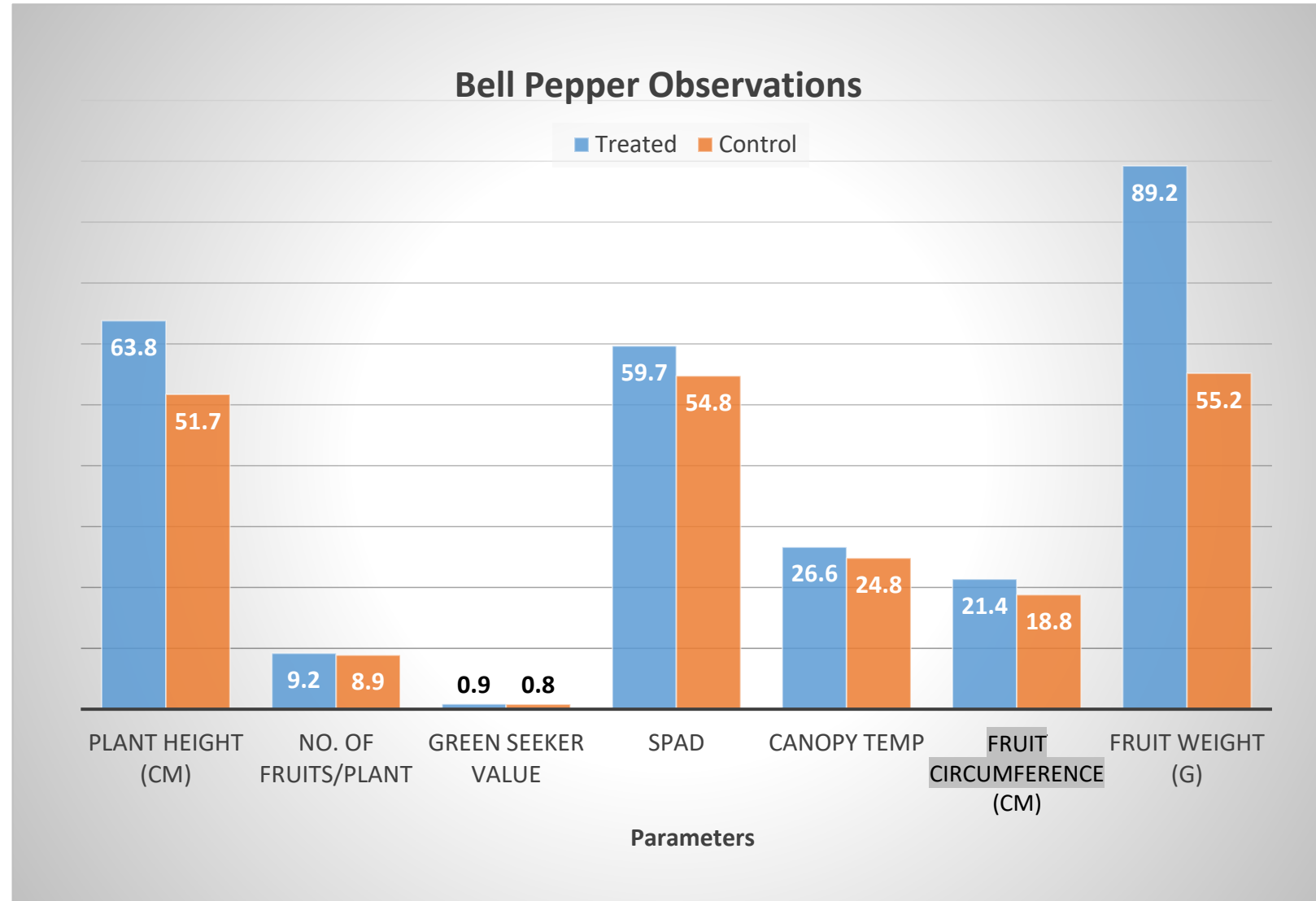
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The preliminary measured results:

- Plant height.....+23%
- No. of Fruits per Plant.....+3.4%
- Green Seeker value (NDVI, vegetation index).....+12.5%
- SPAD (leaf chlorophyll).....+9%
- Canopy Temp.....+7.2%
- Fruit Circumference.....+14%
- Fruit Weight.....+62%

Bottom line: **3.4% more peppers that are 14% bigger and 62% heavier.**





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As seen in the samples below, the KPCB-treated peppers are not only bigger and heavier, but they also have more vibrant green color and are BEST SHAPED per USDA grades and standards* and will therefore translate to higher value in the marketplace (these peppers are projected to qualify for the highest “U.S. Fancy” grade when full-sized). In a Cornell University study** by veggie specialist Robert Hadad, he stresses specifically regarding bell peppers: “Poor shape gives the appearance of poor quality”.



Control



KPCB

* <https://www.ams.usda.gov/grades-standards/sweet-peppers-grades-and-standards>

** https://rvpadmin.cce.cornell.edu/uploads/doc_645.pdf - slide 21