

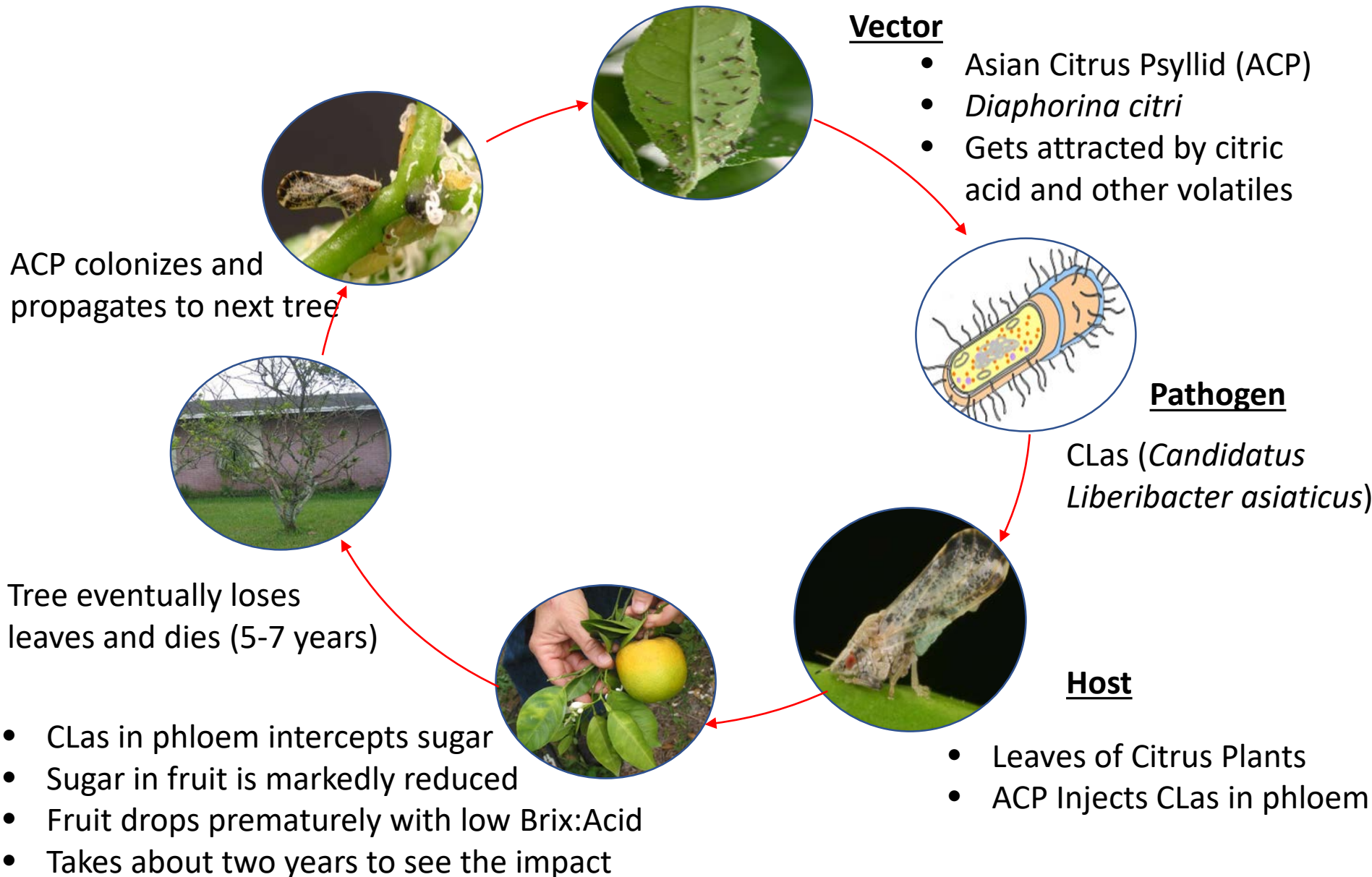
Cranberry Extracts for Citrus Health



Soumya Roy
Ocean Spray Cranberries, Inc.
September 20, 2018



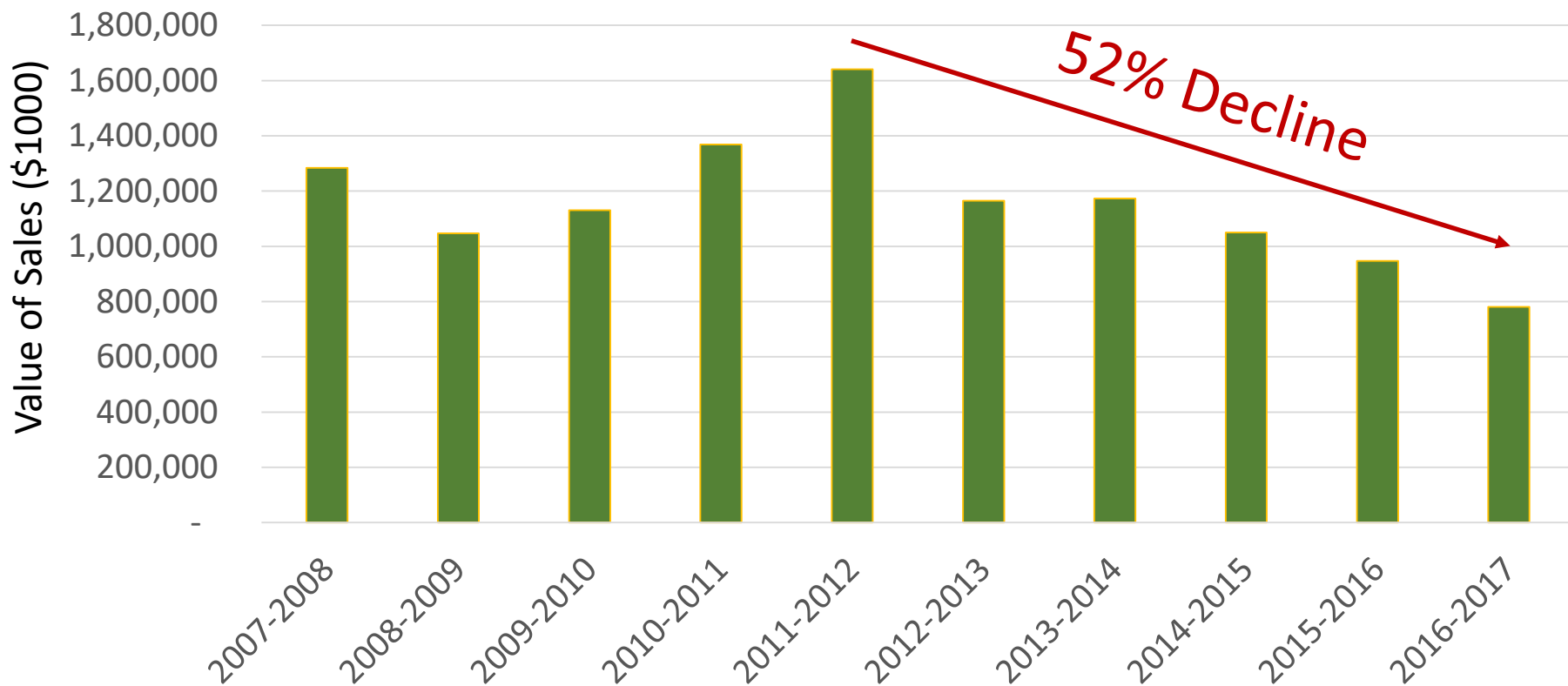
HLB (Huang Long Bing) or Citrus Greening





Florida Citrus Industry Is Failing

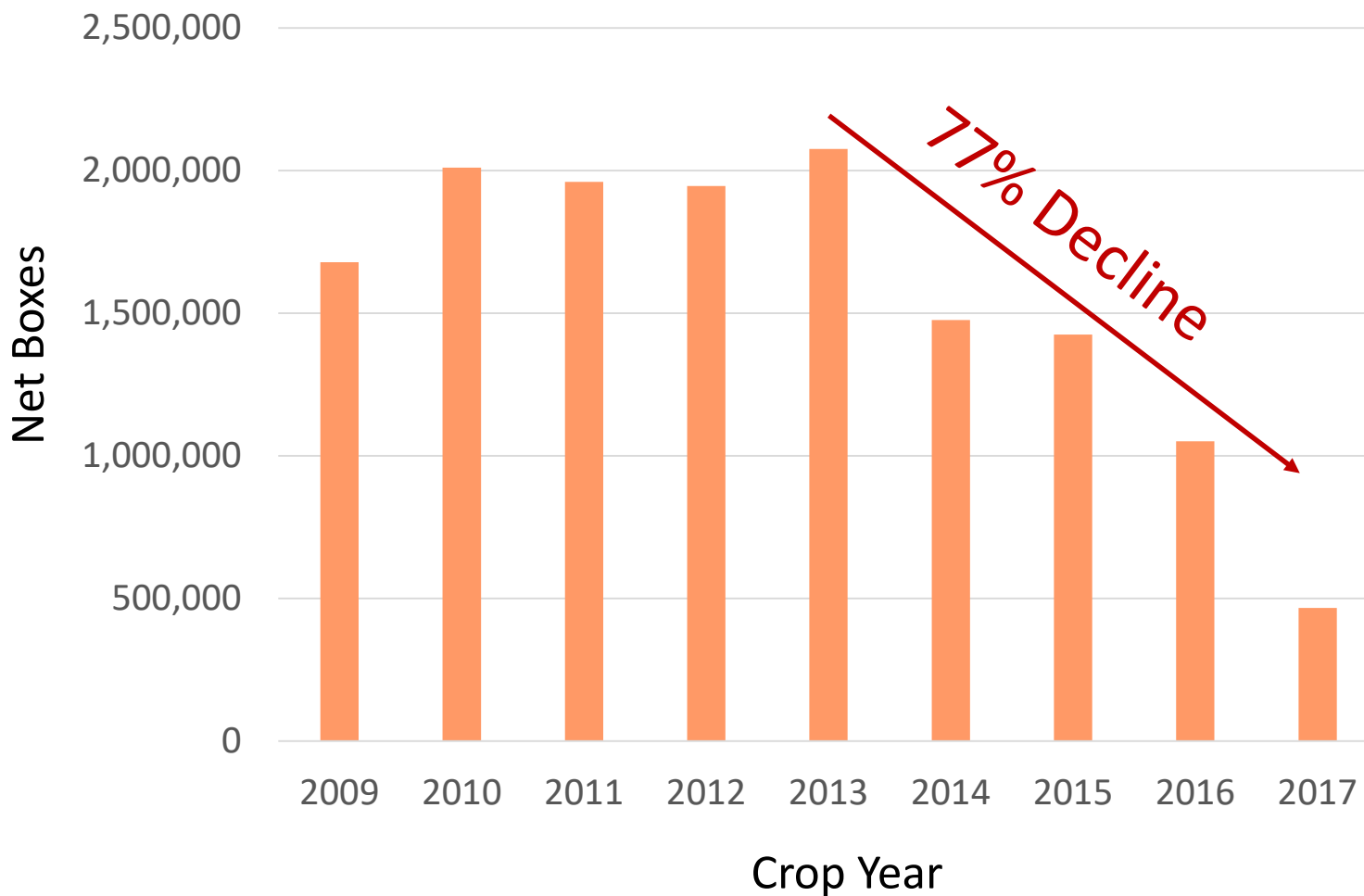
- 2018: Projected worst harvest in 73 years in Florida
- Also keeps spreading in Texas
- World wide problem





Our Grapefruit Co-op Yield

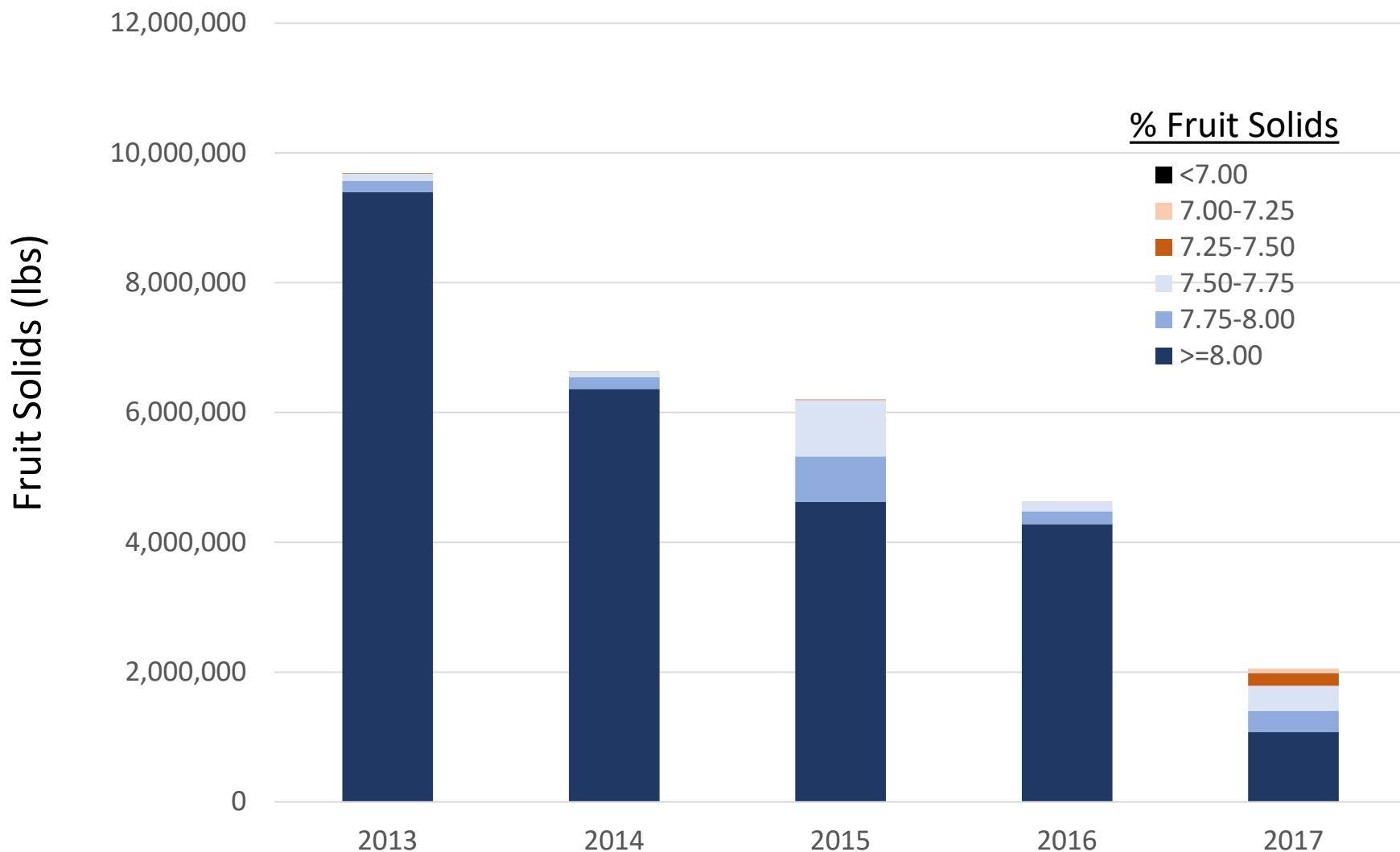
Grapefruit is particularly susceptible to greening





Significant Loss of Co-op Grapefruit Quality

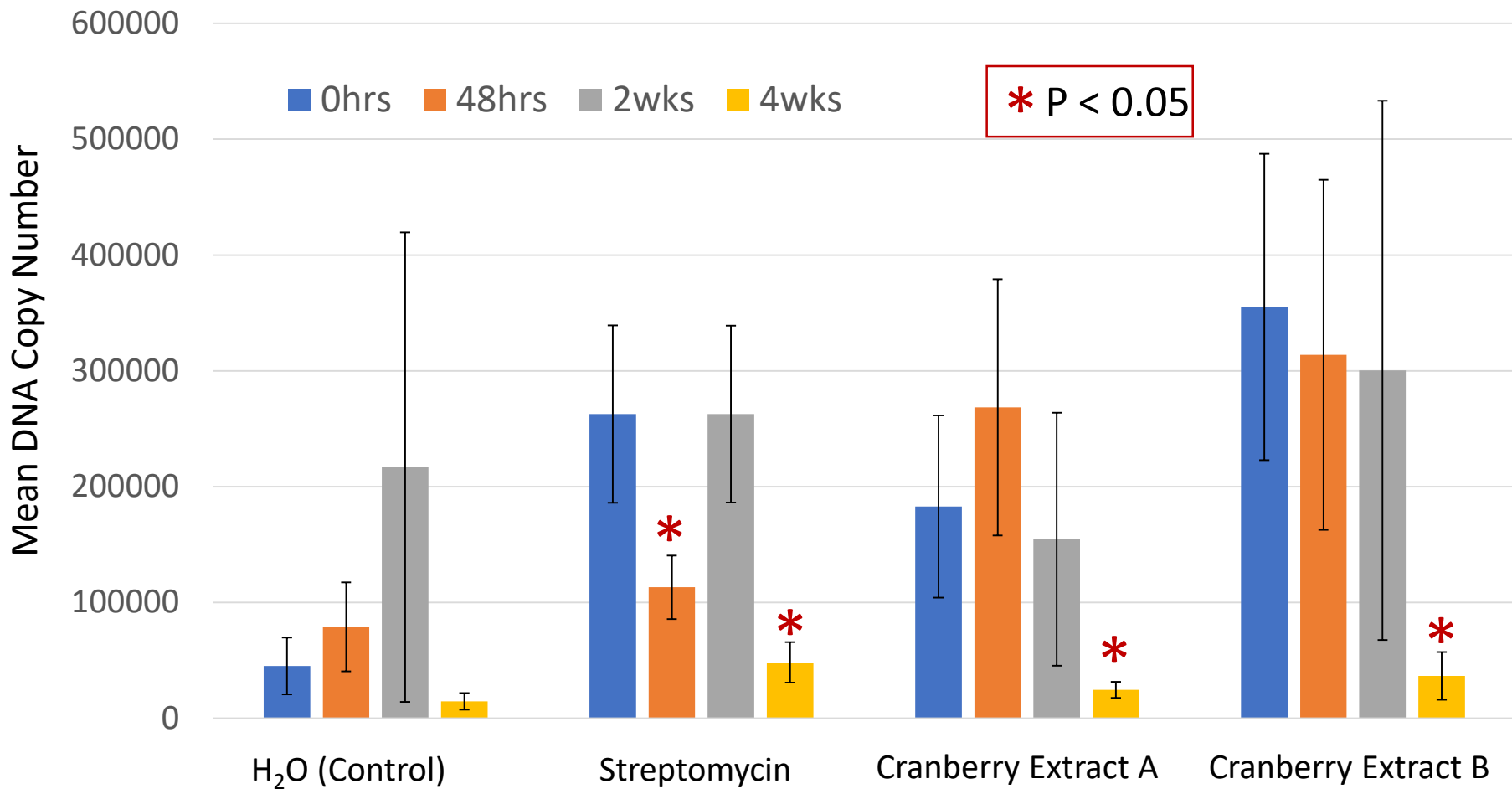
Lower Sugar, higher acids and bitter tasting





Cranberry Extracts: Effective as Streptomycin

- Greenhouse study using soil drench on tree seedlings
- Streptomycin is not approved for soil drench



Study conducted with Dr. Kirsten Stelinski, University of Florida, Lake Alfred



Additional Studies Complete/In-Progress

- Phytoxicity studies (Complete):
 - Soil Drench (Stelinski, University of Florida, Lake Alfred, FL)
 - Leaf submersion study (Shatters, USDA-ARS, Ft. Pierce, FL)
- Phloem Uptake Study (Phase 1 Complete):
 - Dr. Robert Shatters at USDA-ARS, Ft. Pierce, FL
- Soil-Drench Study in greenhouse on tree seedlings- Phase 2 (Three months)
 - Dr. Kirsten Stelinski, University of Florida, Lake Alfred, FL
- Field Study:
 - Dr. Robert Adair, Florida Research Center for Agricultural Sustainability, Vero Beach, FL.

Cranberry

Biopesticides in Development



**From our Cranberry
Grower Families...**



**to Florida Citrus
Grower Families**