



# Research Update on Pierce's Disease Resistant Grape Cultivar

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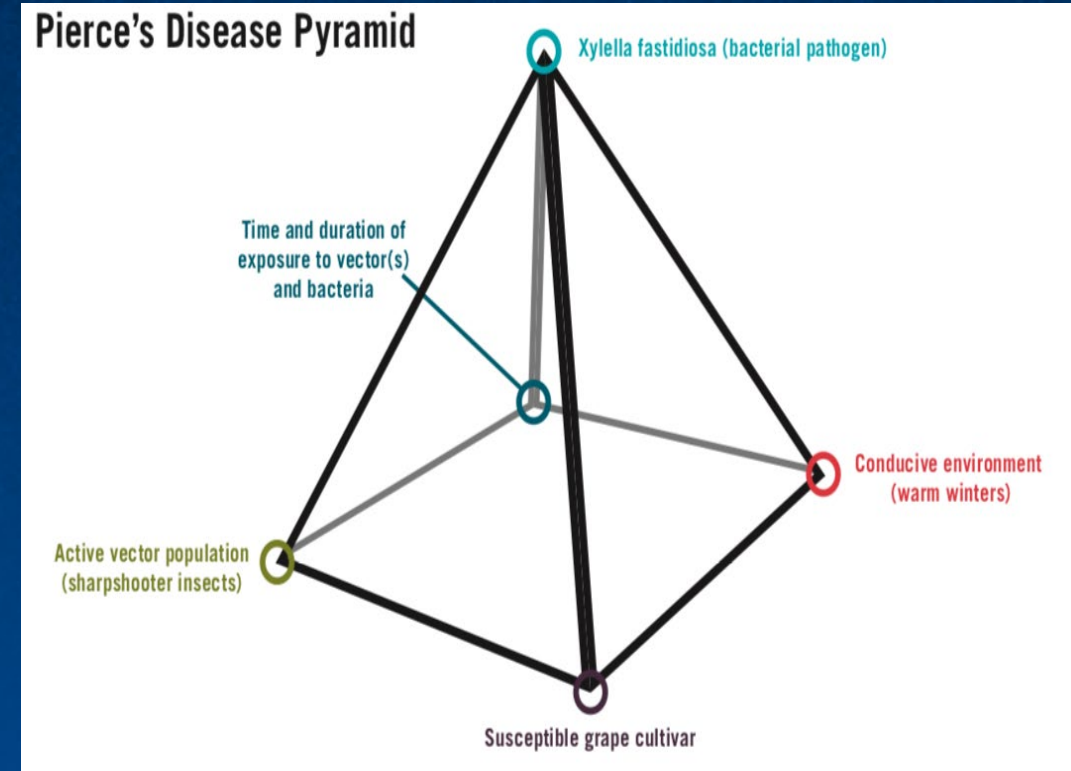
*UF Fruit Crops Lab*

*Horticultural Sciences Department - IFAS*

*University of Florida*

# Pierce's Disease

- Caused by bacteria (*Xyella fastidiosa*)
- Lives in the xylem
- Young vines are more susceptible than mature vines
- The glassy-winged sharpshooter is a vector of Pierce's Disease



Source: UGA Crop Extension Bulletin; Hickey, 2019

# Pierce's Disease Symptoms

- Leaves become slightly yellow or red along margins
- Leaf margins dry or die
- Fruit clusters shrivel or raisin
- Matchsticks - Dried leaves fall leaving the petiole (leaf stem) attached to the cane
- Green Islands – Wood matures irregularly, producing patches of green, surrounded by mature brown bark



Source: UGA Crop Extension Bulletin; Hickey, 2019

# Pierce's Disease Resistant Cultivars

## Blanc du bois

- University of Florida - 1987
- White cultivar
- Medium-small cluster
- Large berries
- Medium bunch compactness



# Pierce's Disease Resistant Cultivars

## Black Spanish

- Colored
- Small berry size
- High bunch compactness
- Large clusters



# Pierce's Disease Resistant Cultivars

## Ambulo blanc

- White cultivar
- 97% vinifera
- Small to medium berries
- Small bunches
- Compact bunches
- High productive



# Pierce's Disease Resistant Cultivars

## Caminante blanc

- 97% vinifera
- Mid season
- Small berries
- Medium-small bunches
- High bunch compactness



# Pierce's Disease Resistant Cultivars

## Caminare noir

- 94% vinifera
- Early bud break, bloom and ripen
- Medium berries
- Large bunches
- High bunch compactness



# Pierce's Disease Resistant Cultivars

## Errante Noir

- 97% vinifera
- Medium-Large berries
- Medium-loose cluster
- Mid-season
- Wines ranked very high in tasting



# Pierce's Disease Resistant Cultivars

## Paseante noir

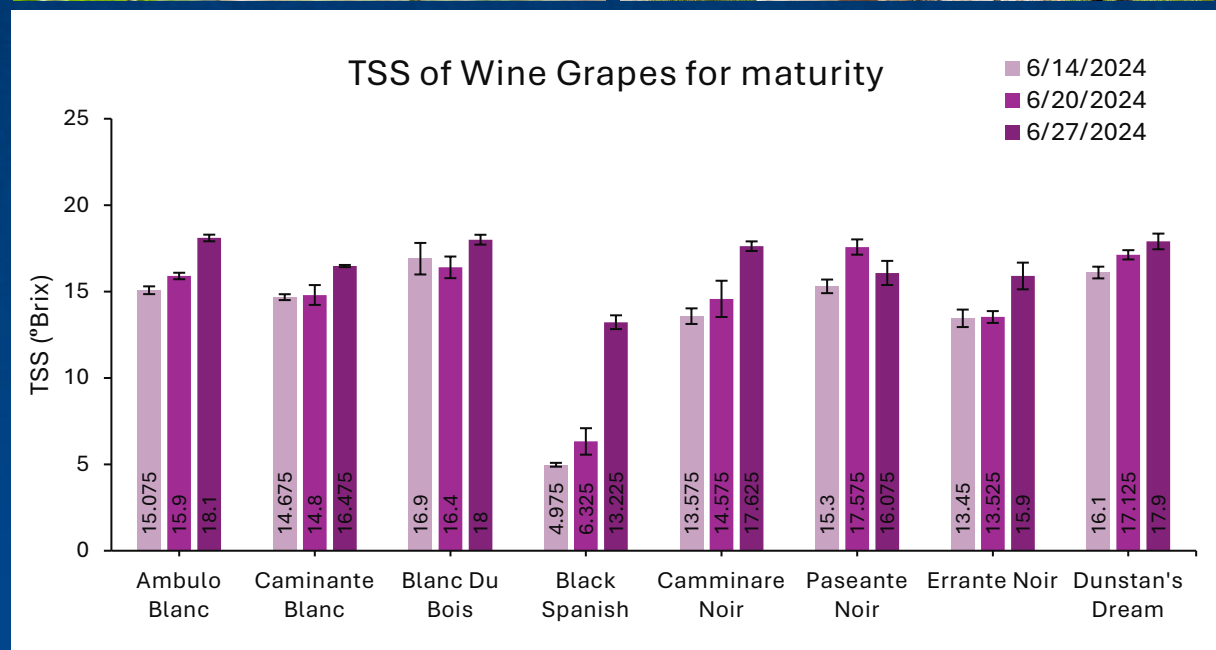
- 97% vinifera
- Large bunch size
- Medium berry size
- High compactness



# Fruit Harvesting

## Determine Fruit maturity

- Color
- Random sampling for TSS
  - Started from veraison
  - Weekly evaluation
  - 5 berries per cluster



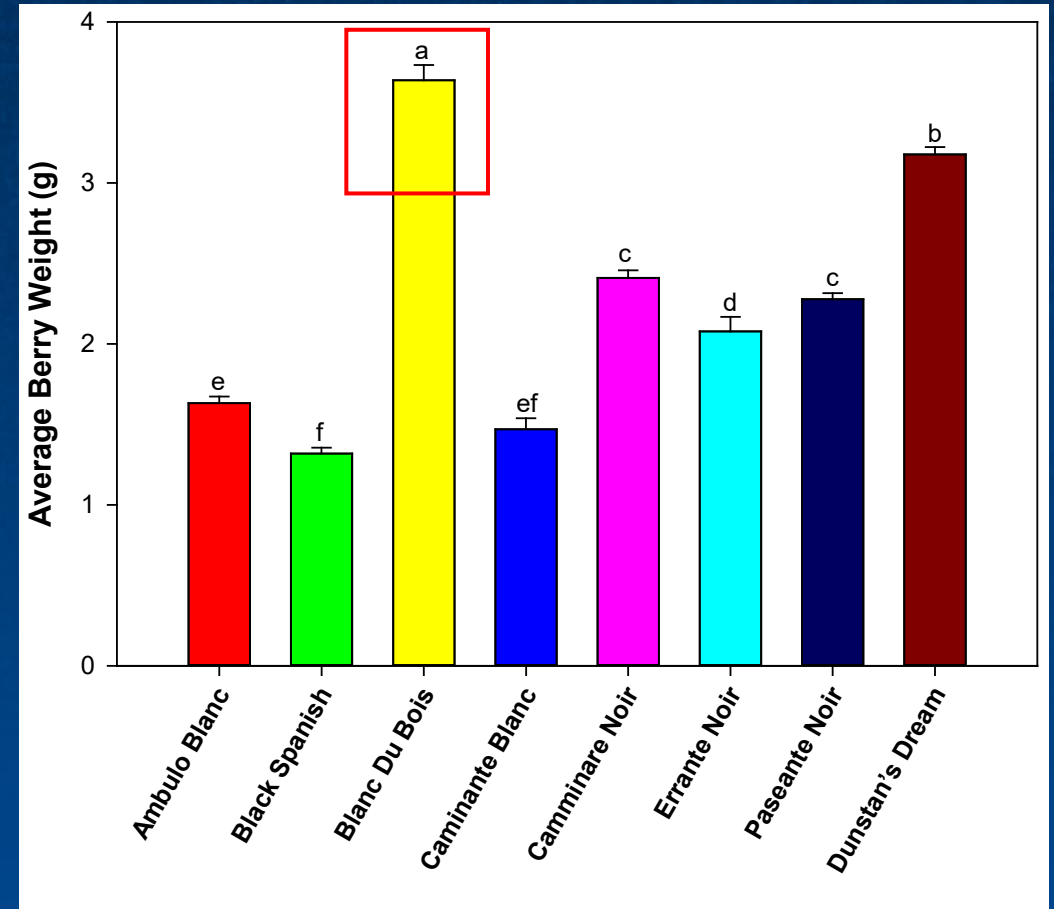
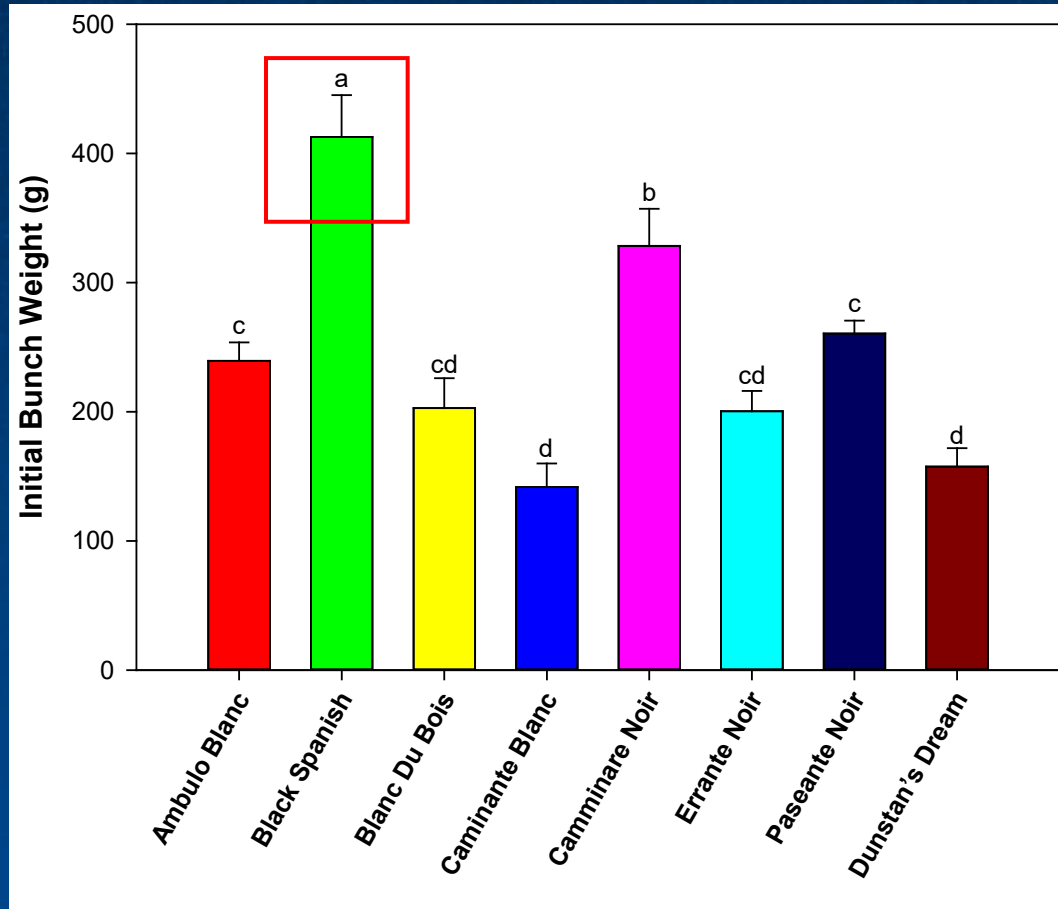
# Fruit Harvesting

- Harvesting in Early – Mid July
- Transported to UF Fruit crops Lab
- Lab evaluations
  - Physical parameters
  - Biochemical parameters
  - Bioactive compounds



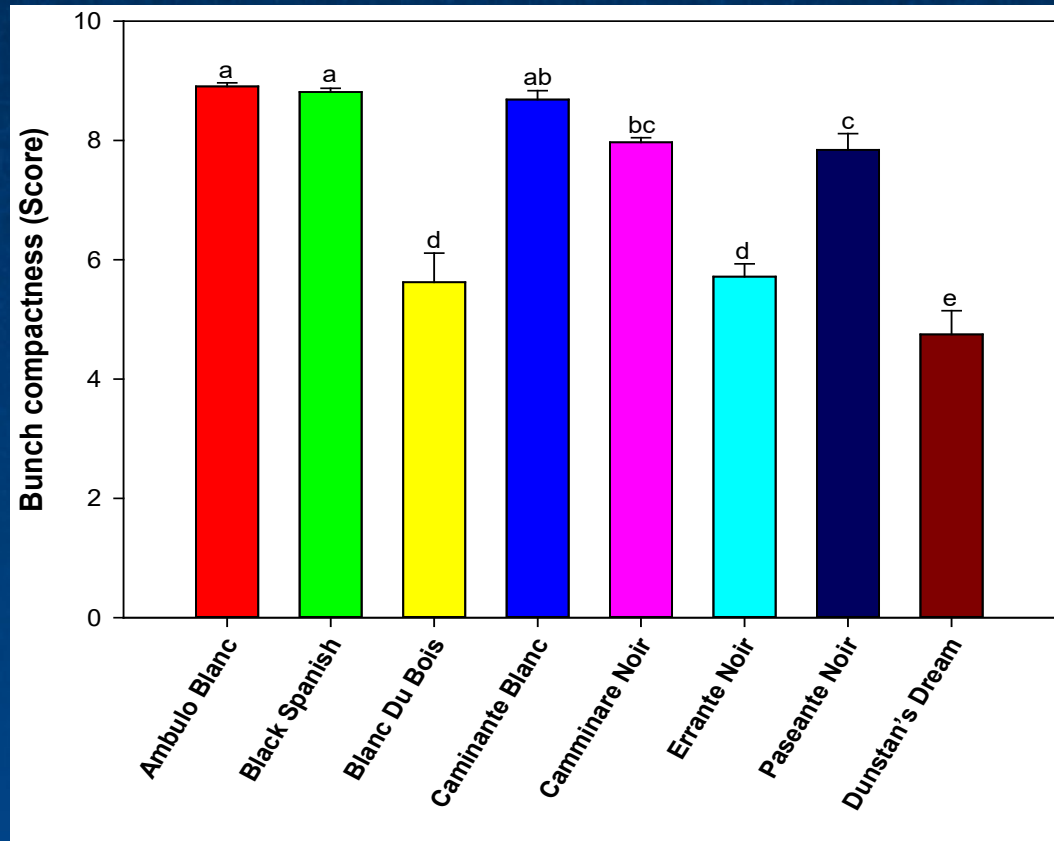
# Results

## Bunch and berry weight



# Results

## Bunch compactness



Ambulo  
Blanc



Black  
Spanish



Caminante  
Blanc



Caminare  
Noir



Paseante  
Noir



Blanc Du  
Bois



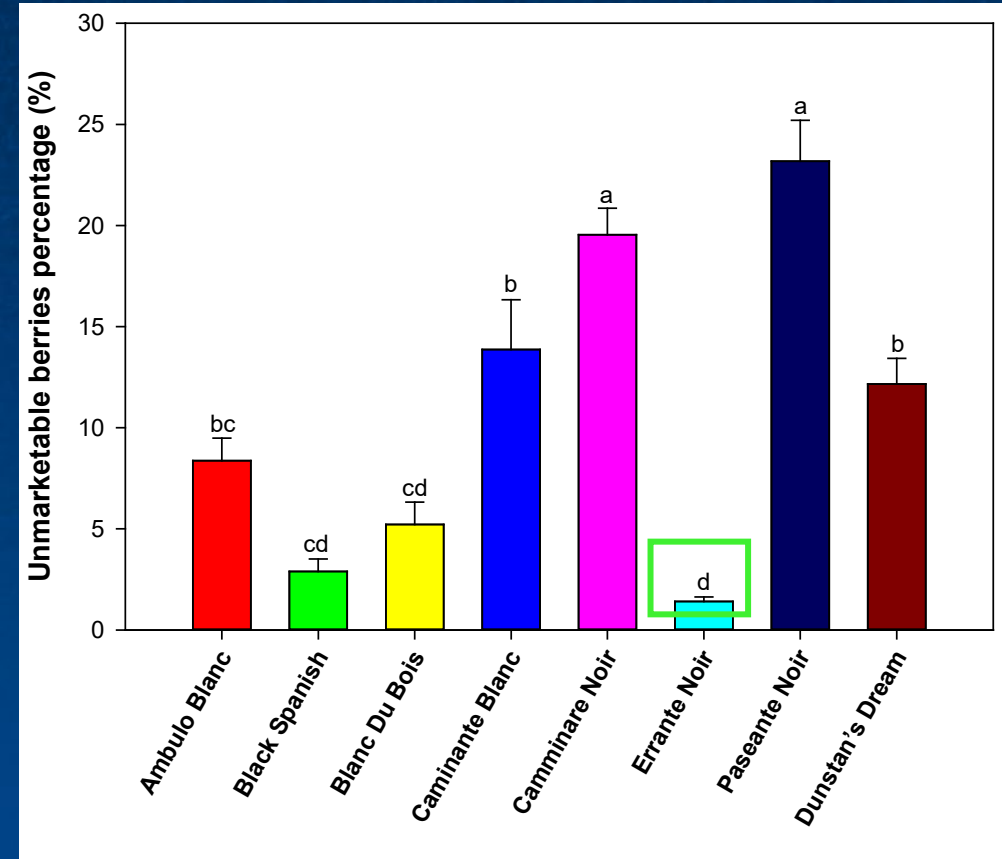
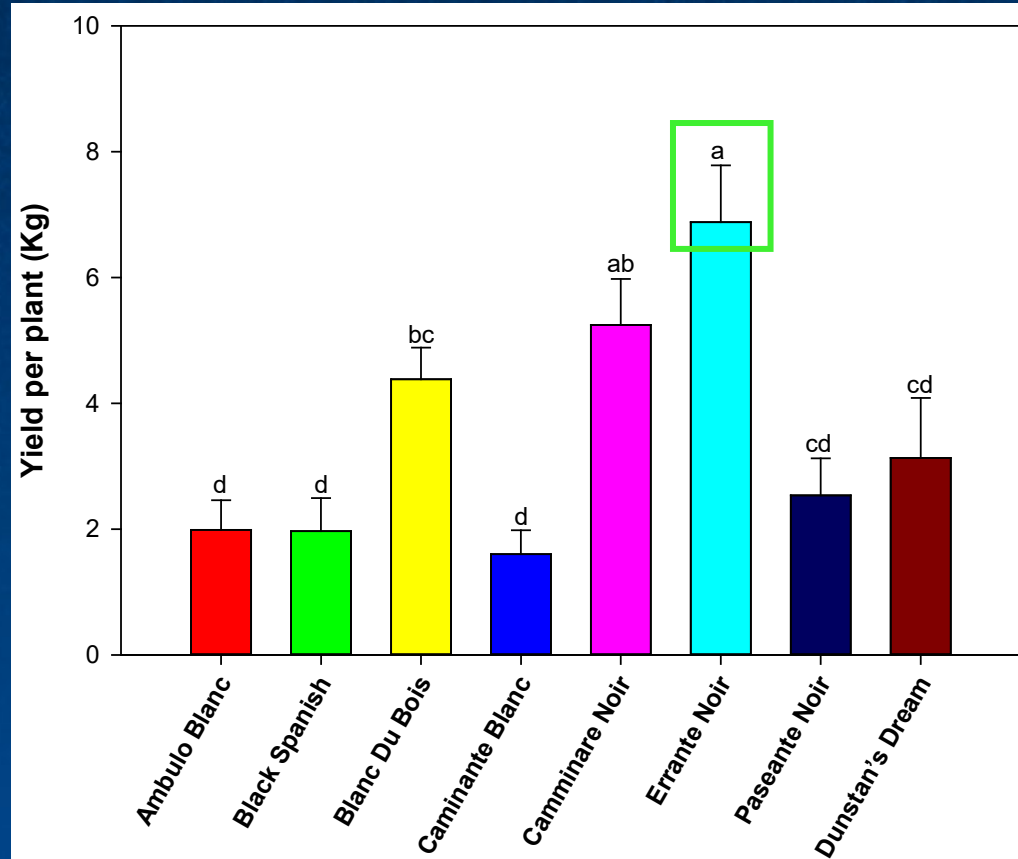
Errante  
Noir



Dunstan's  
Dream

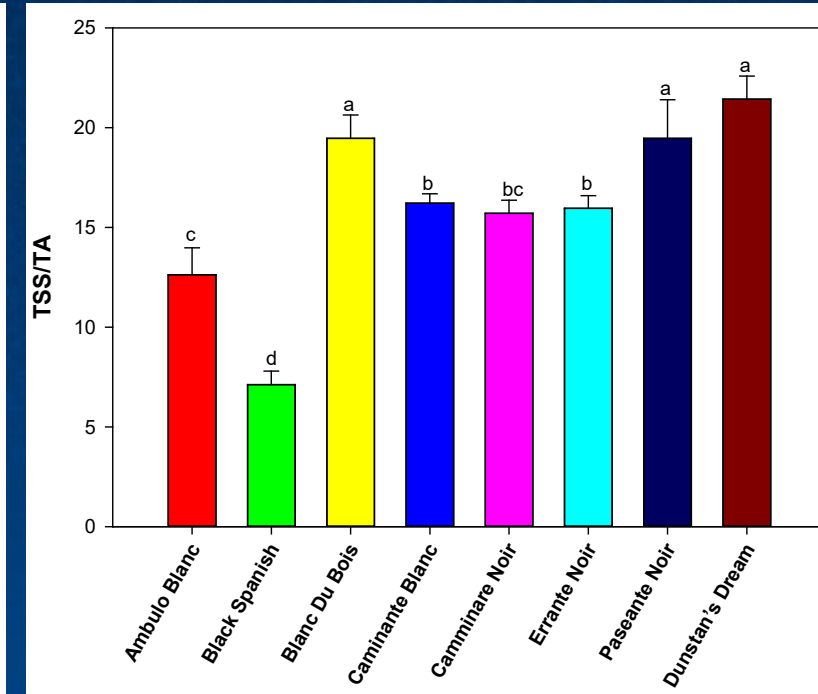
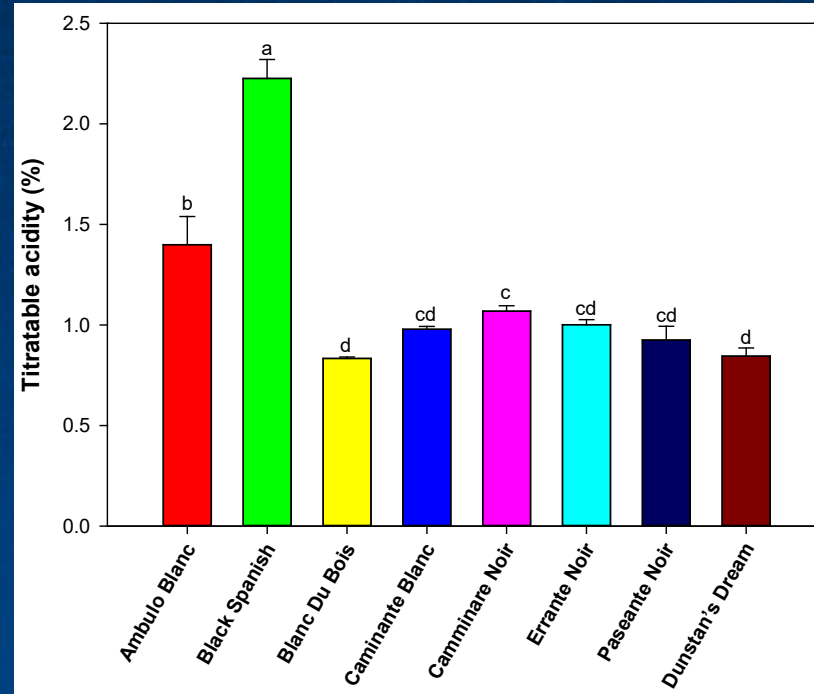
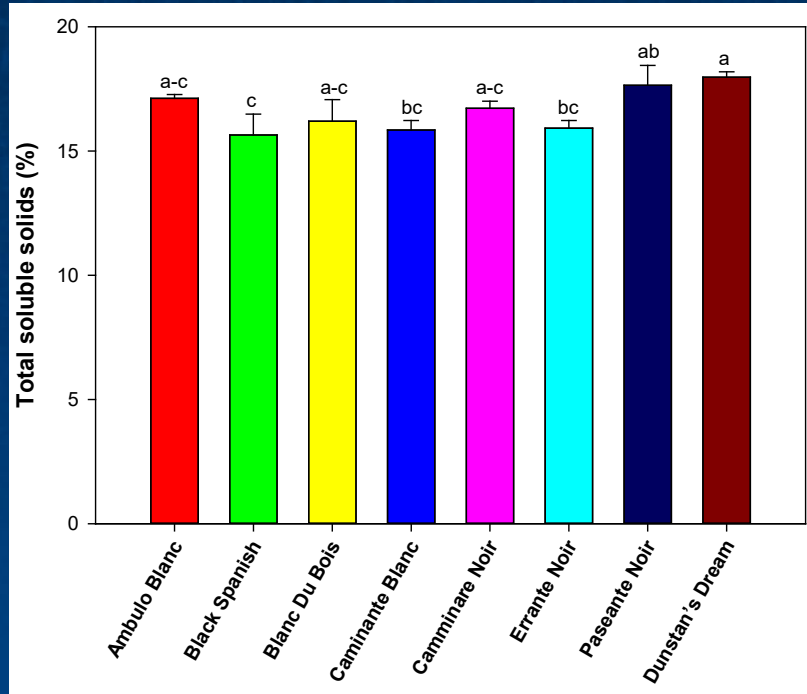
# Results

## Plant yield and unmarketable berries



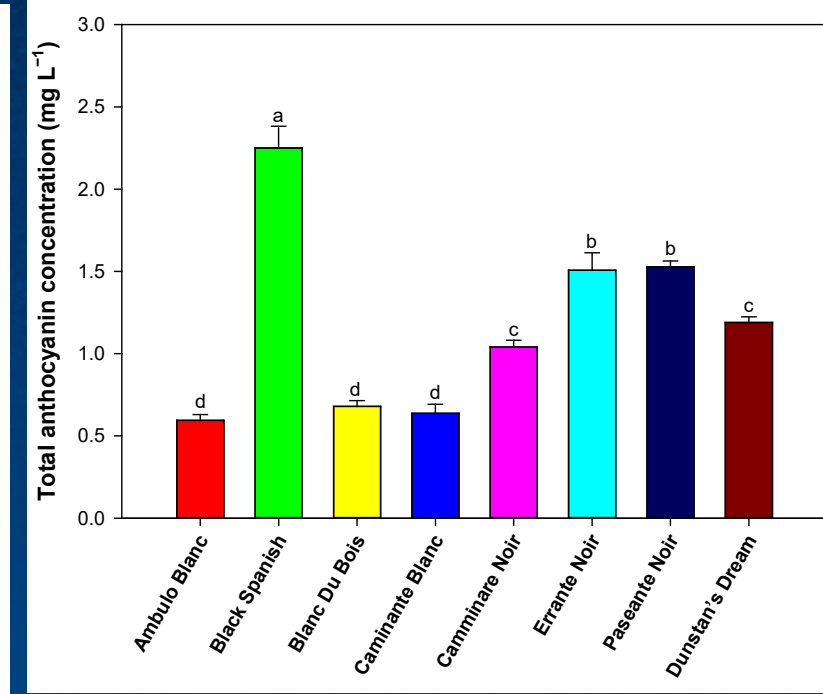
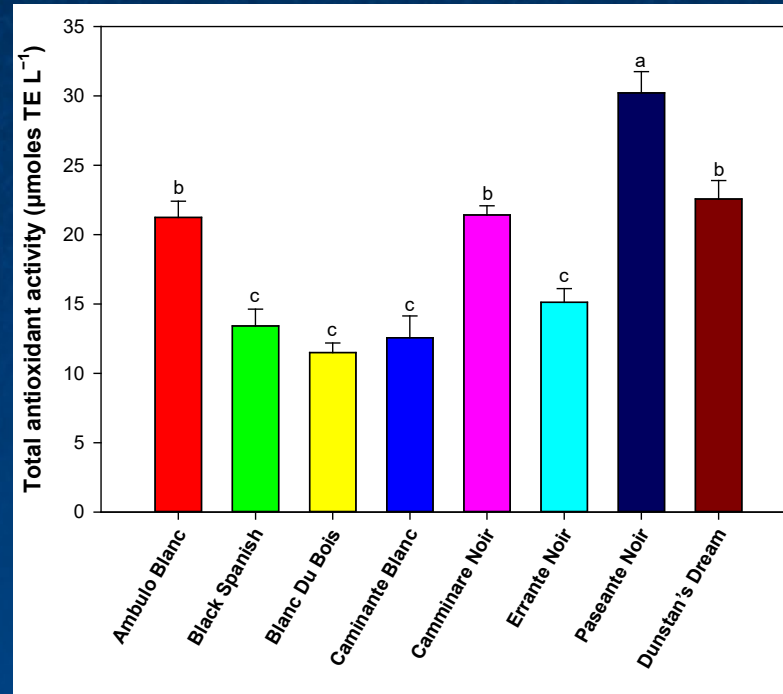
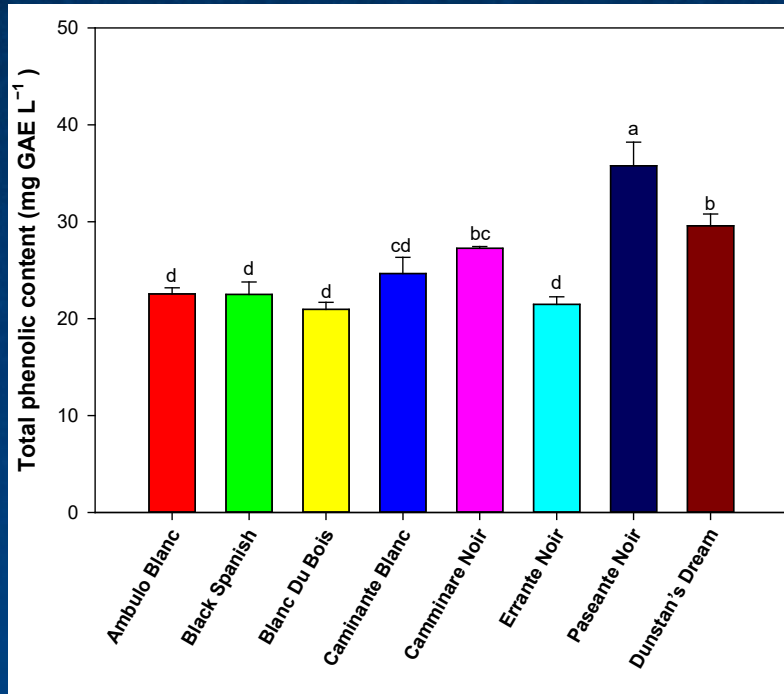
# Results

## Biochemical characters



# Results

## Bioactive compounds



## Expected outcomes and future scope

- Disease resistant with no mortality
- Good production
  
- Early or delayed harvesting to avoid summer rains
- Canopy management for better light penetration
- Altering the bunch compactness to reduce fruit rot

# Acknowledgement



## FRUIT CROPS LAB

Gainesville, Florida, USA

**UF | IFAS**  
UNIVERSITY of FLORIDA



HORTICULTURAL  
SCIENCES  
DEPARTMENT

# THANKS

