

BIOACTIVE COMPOUNDS AND QUALITY PARAMETERS IN DIFFERENT ORGANIC APPLE VARIETIES



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INTRODUCTION

The interest on organic plant-based foods is constantly growing due to their health benefits and ecological importance along with increasing demands of the consumers for quality foods produced sustainably. Organic apples were known to present high content in polyphenols, compounds which are recognized to have multiple biological activities [1].

Aim: to evaluate the variations in quality parameters (firmness, total soluble solids and titratable acidity) and bioactive compounds (anthocyanins and vitamin C) of three organic apple varieties (Gala, Golden and Red Prince) harvested at maturity from an organic farm in August and September 2018.

METHODOLOGY

Organic apples



Physico-chemical analyses [2]

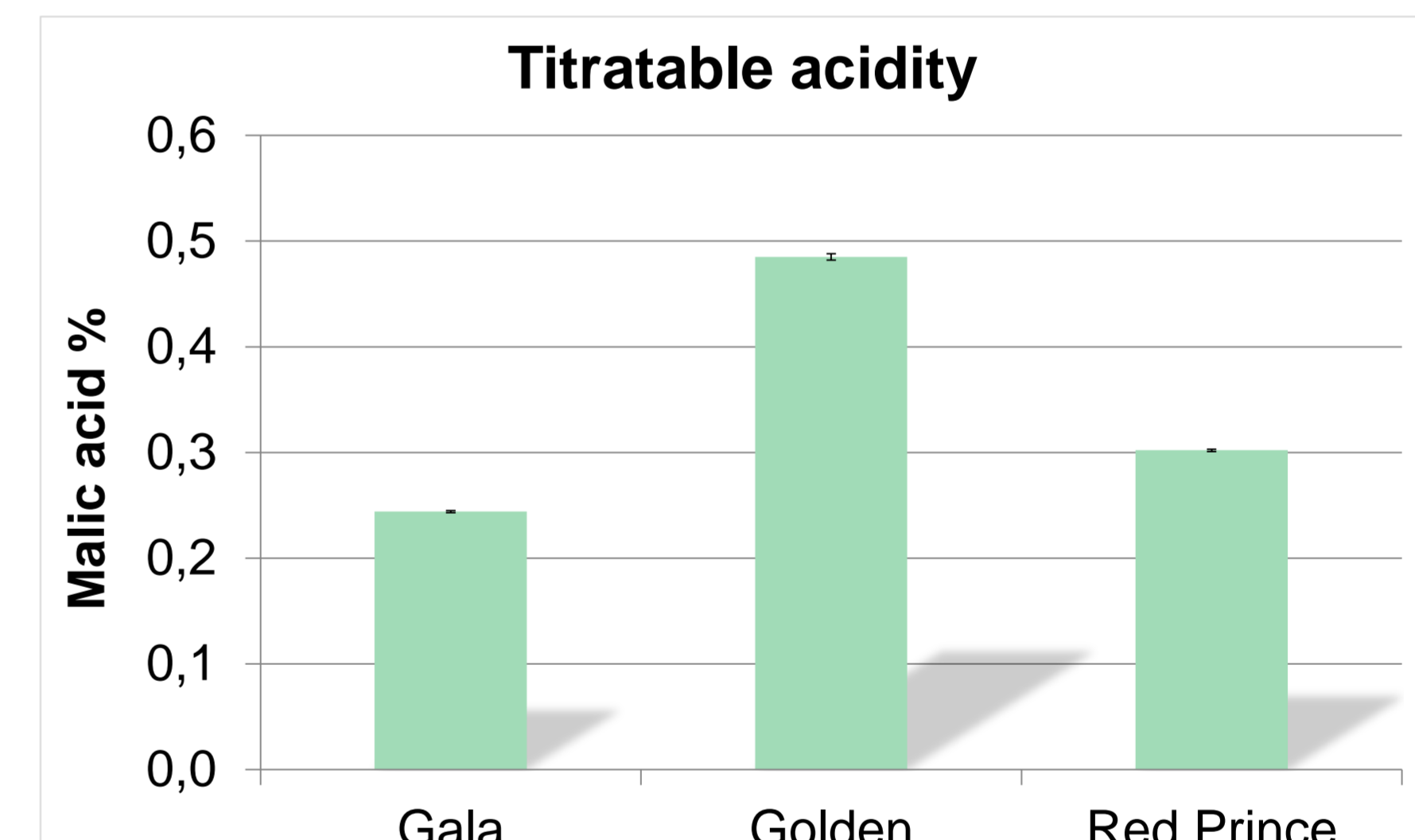
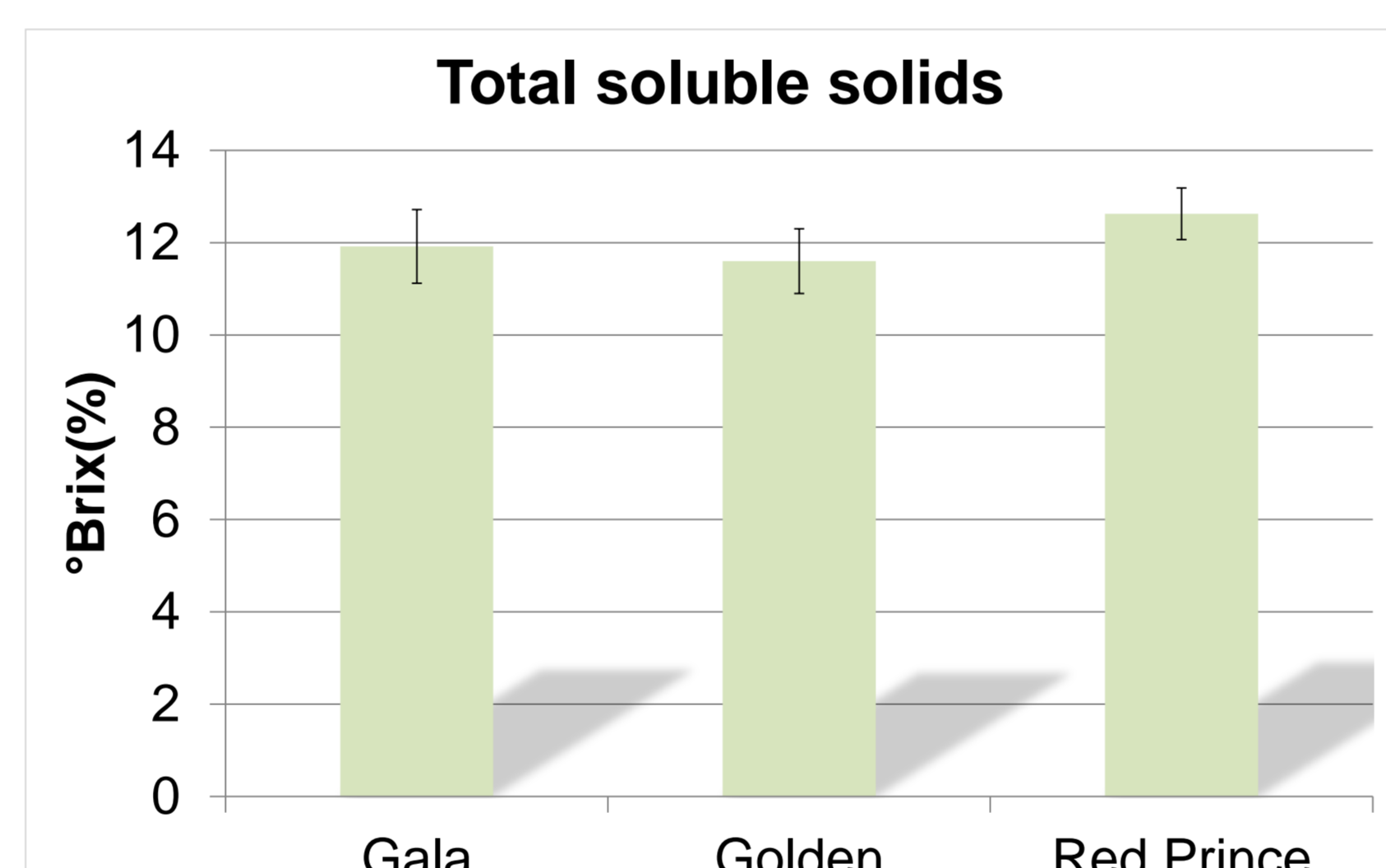
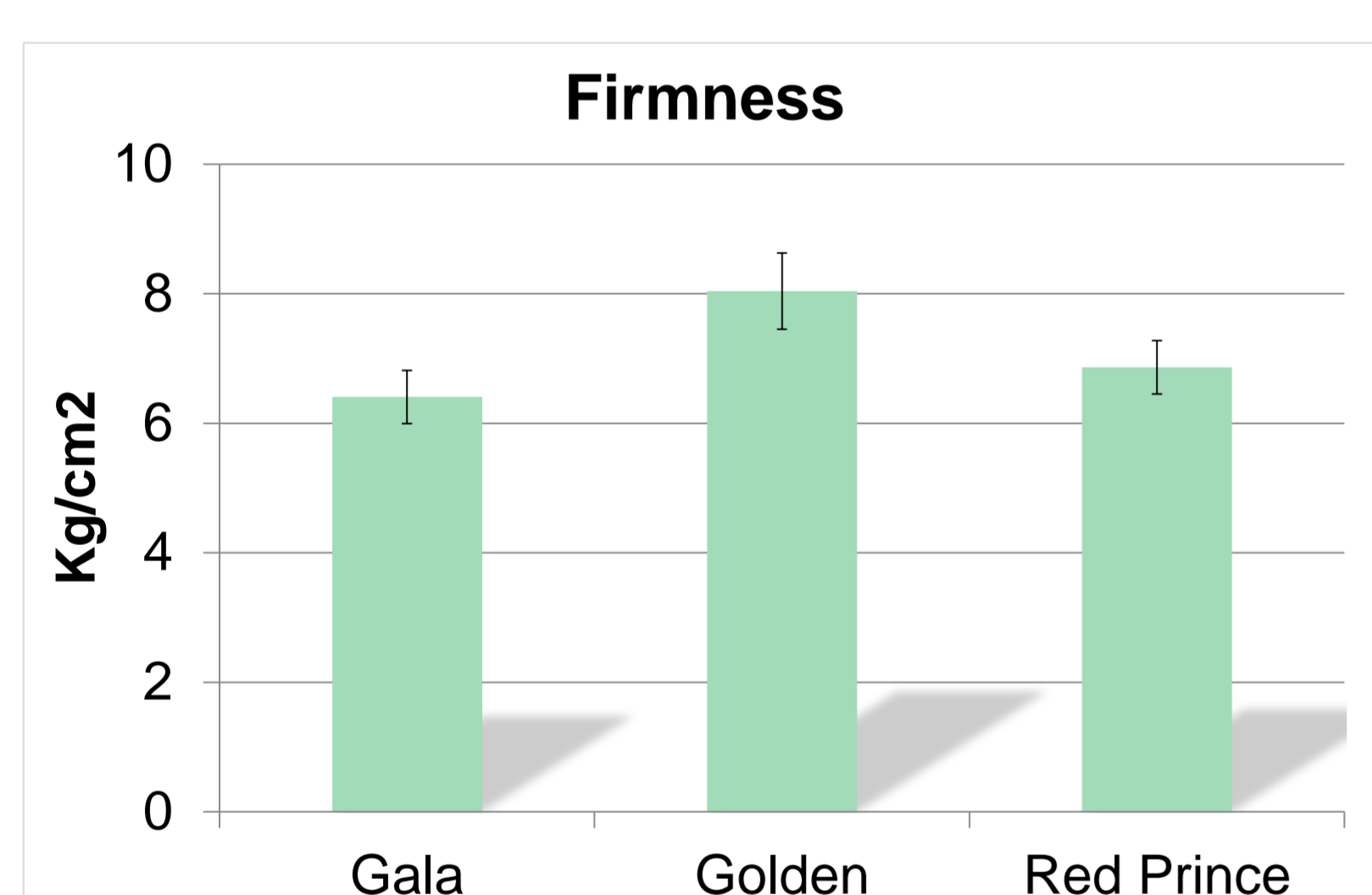
- **Firmness**
 - 53200 digital fruit penetrometer (T.R. Turoni, Italy)
- **Total soluble solids (°Brix)**
 - Kruss Digital Handheld Refractometer
- **Titratable acidity**
 - titration with 0.1 N NaOH to 8.1 pH

Anthocyanins and vitamin C analyses

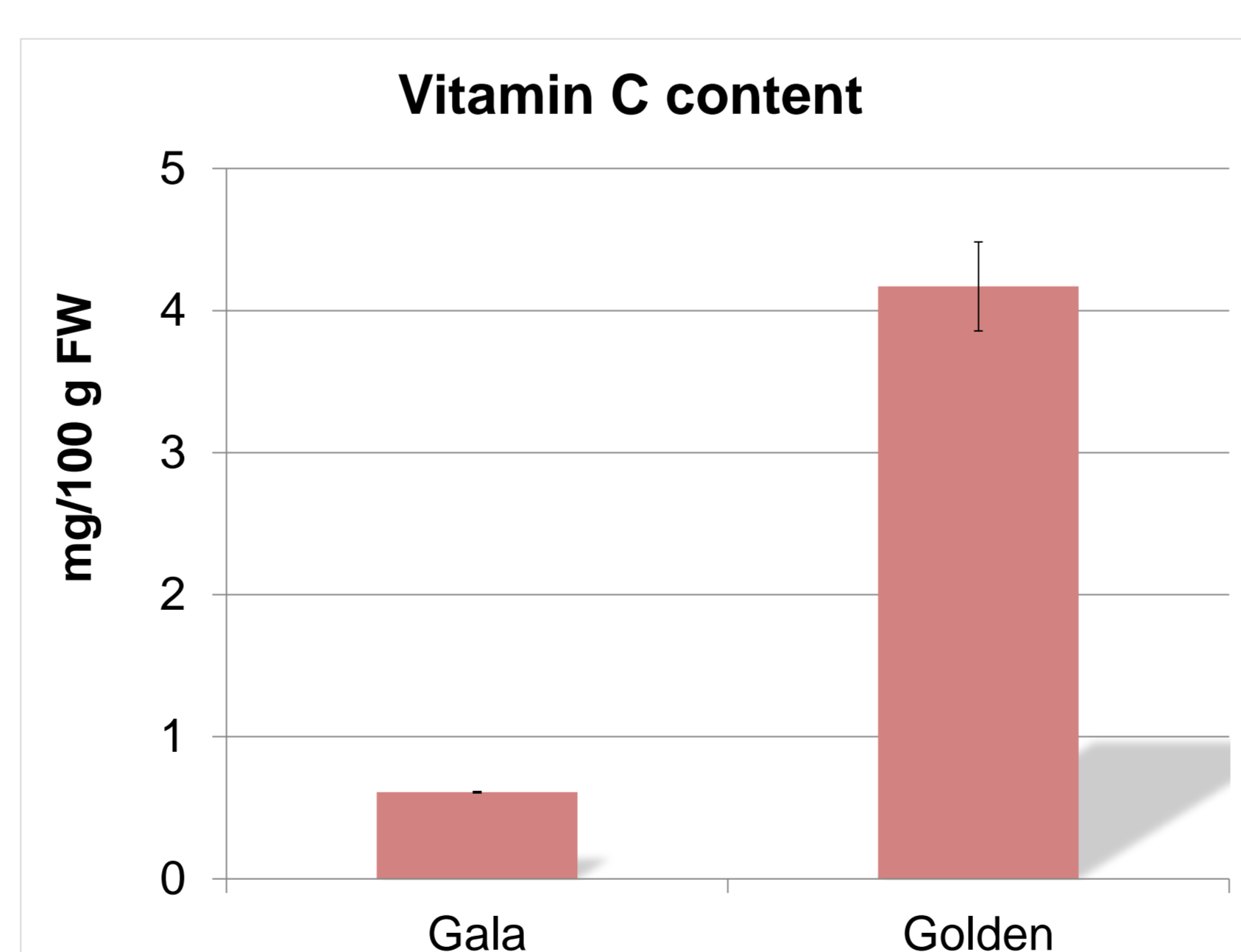
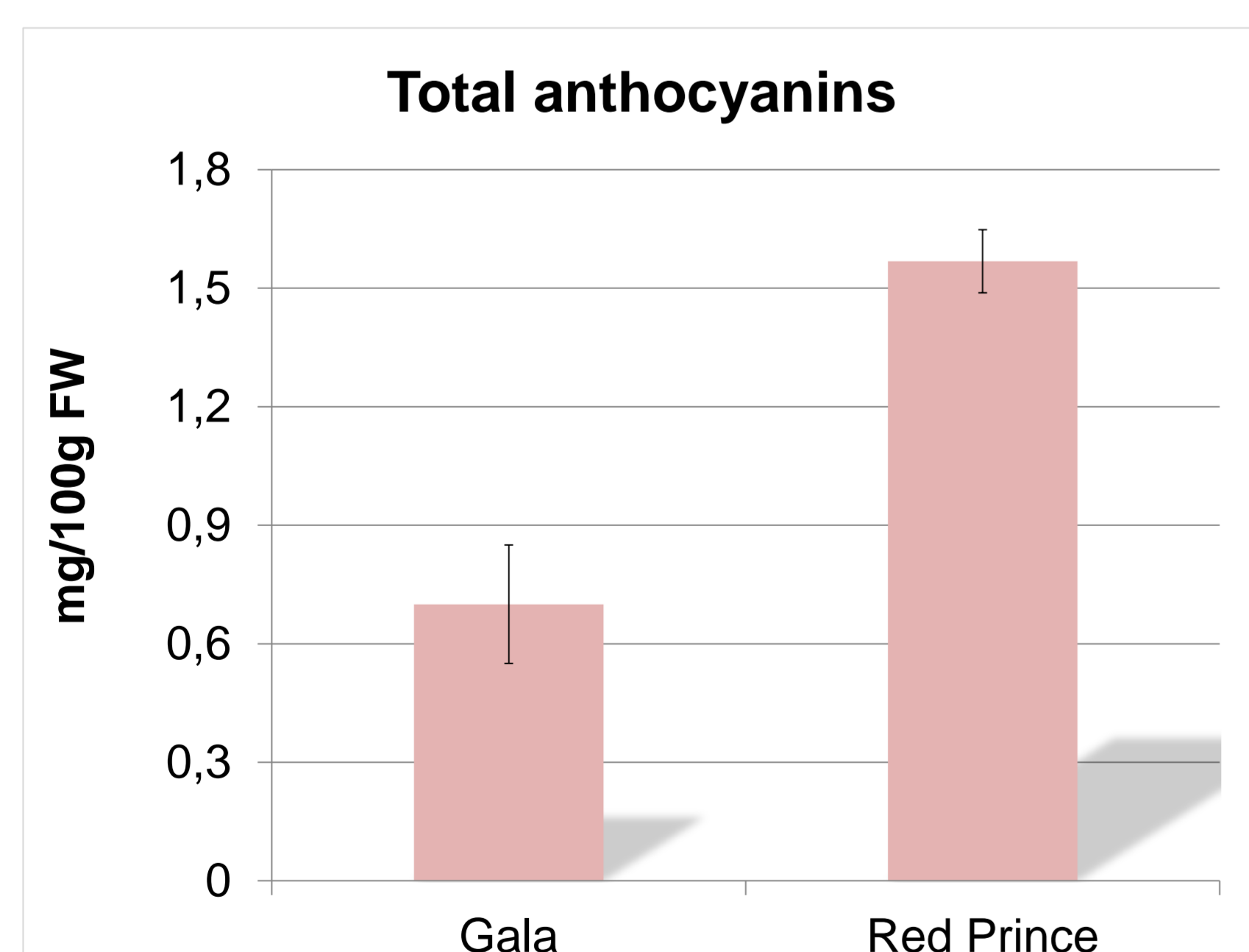
- **Total anthocyanins by spectrophotometric method**
 - acidified methanolic (1% HCl, v/v) extracts
 - vis. spectroscopy at 530 nm
 - Specord 210 Plus UV/VIS spectrophotometer
- **Vitamin C by HPLC**
 - acidified aqueous extracts, 244 nm
 - Agilent Technologies 1200 chromatograph equipped with an UV-DAD detector

RESULTS AND DISCUSSIONS

Variations of physico-chemical parameters in organic apples



Variations of bioactive compounds in organic apples



- ✓ The firmness and titratable acidity were both significantly higher in Golden variety.
- ✓ The Red Prince variety showed higher total soluble solids and total anthocyanin content than Gala and Golden varieties, what recommends their use for processing immediately after harvesting or in the first few weeks, while the Golden variety can be stored under controlled conditions for further processing.
- ✓ The data also pointed that the Golden variety have high vitamin C content compared to the Gala variety.

CONCLUSIONS

From these results it can be concluded that quality parameters and bioactive compounds of organic apples are generally influenced by the variety.



References:

1. Stan A, Bujor OC, Bădulescu L (2017), Research Journal of Agricultural Science, 21: 8-14.
2. Bezdadea-Cătuneanu I, Bădulescu L, Stan A, Hoza D (2018), Agriculture for Life, Life for Agriculture, 1: 260-267.

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