

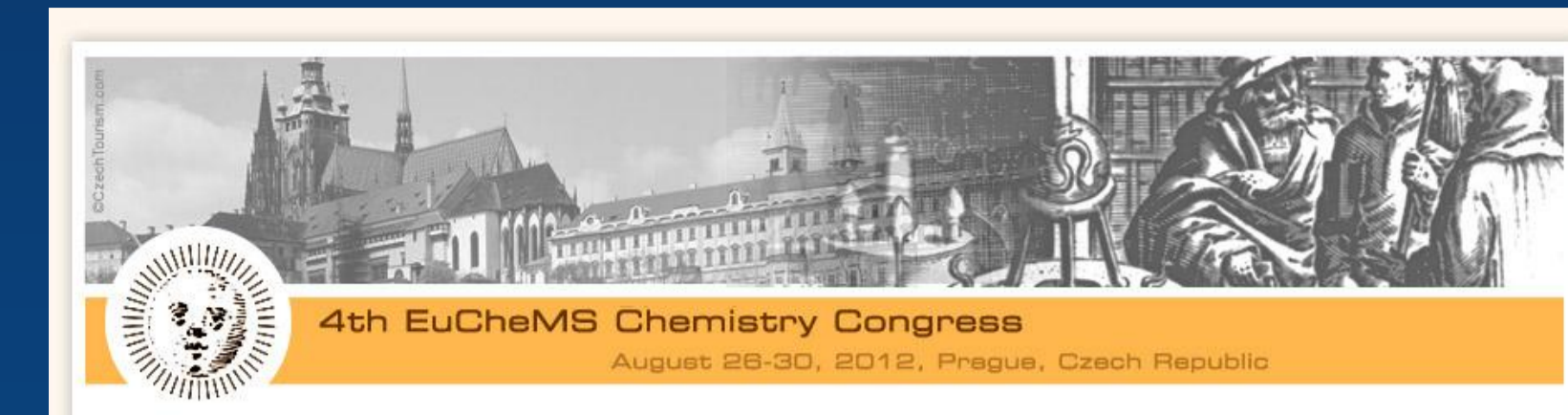
# pH effects on the phytochemical composition and antioxidant activity of processed peach

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## Introduction

Adjustment of pH is often made in processed fruit products to assure food safety and stability of ingredients or additives (e.g. pectins or sorbate). Phytochemical compounds are unstable when exposed to different pH, however they play an important role in the prevention of several diseases and their preservation during the food processing becomes very important.

## Objectives

The objectives of the work were to (i) assess the effect of pH, and (ii) storage period on relevant markers of functional and nutritional properties (antioxidant activity, phenolics and carotenoids) of processed peach puree.

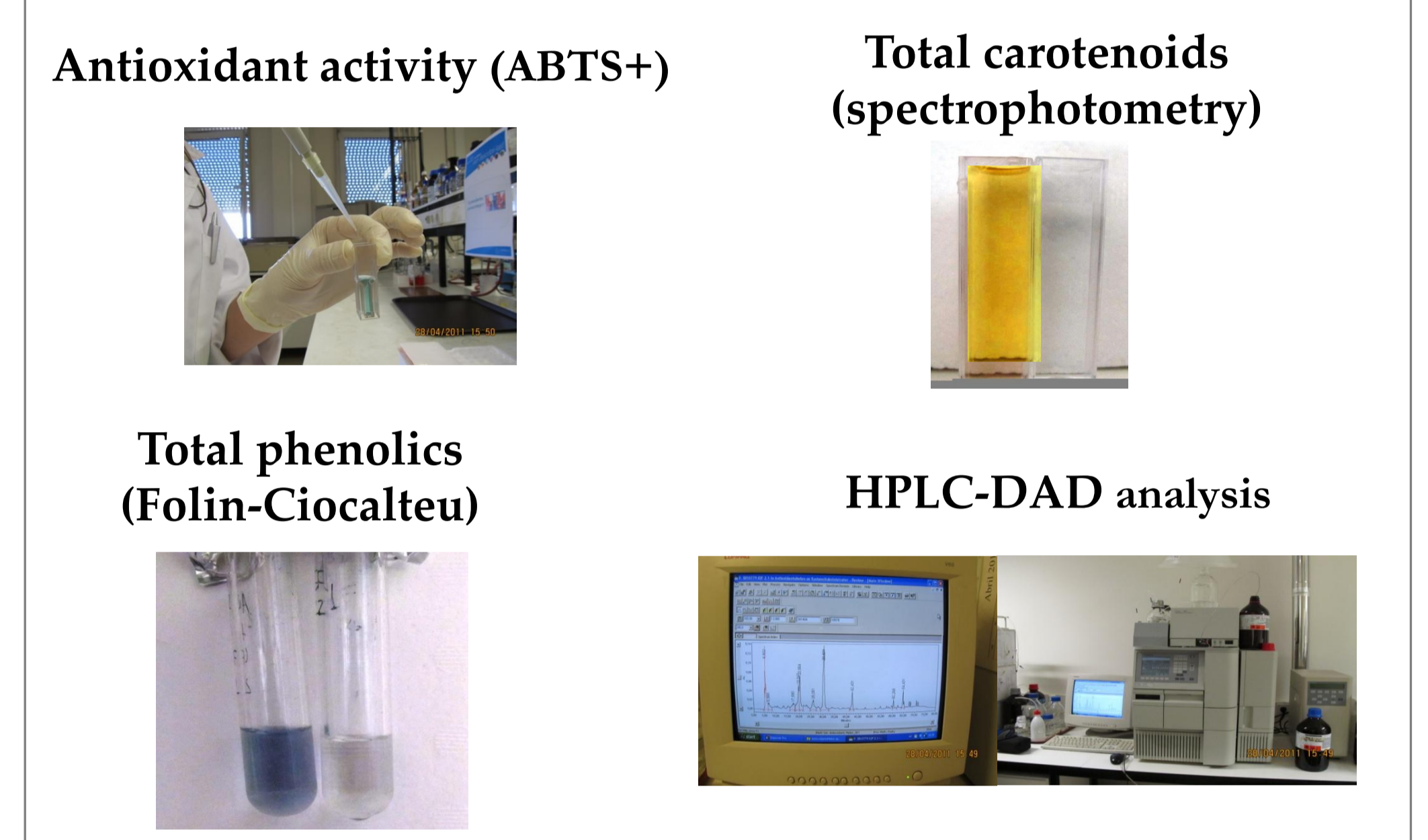
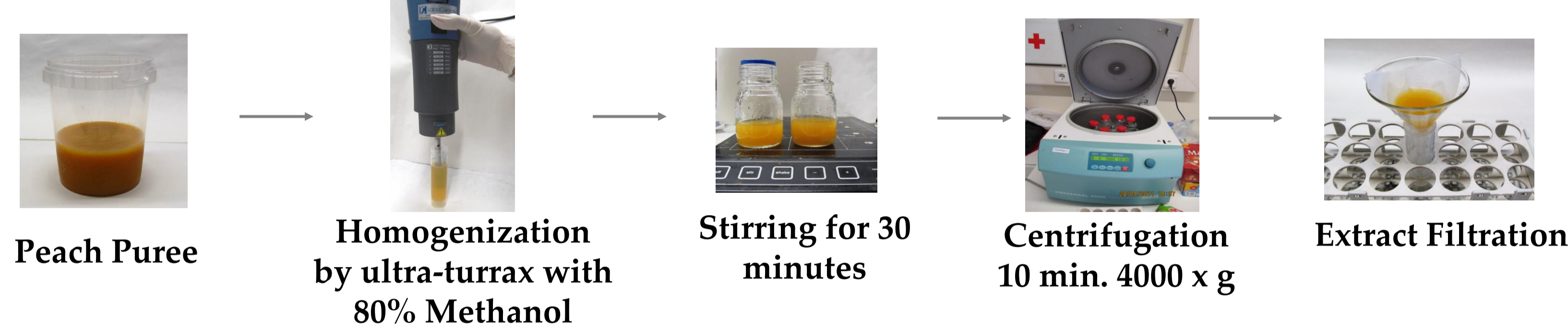
## Methods

1- Clingstone peach [*Prunus persica* (L.) Batsch 'Catherine'] were reduced to puree and the pH values adjusted to 2.5, 3.0, 3.5, 4.0 and 4.5 with citric acid and sodium phosphate.

2- Purees were then heated in a water-bath at 90 °C for 10 minutes.

3- Stored during 90 days at two different temperatures (4.5 °C and at 23 °C).

### Extraction process



## Results & Discussion

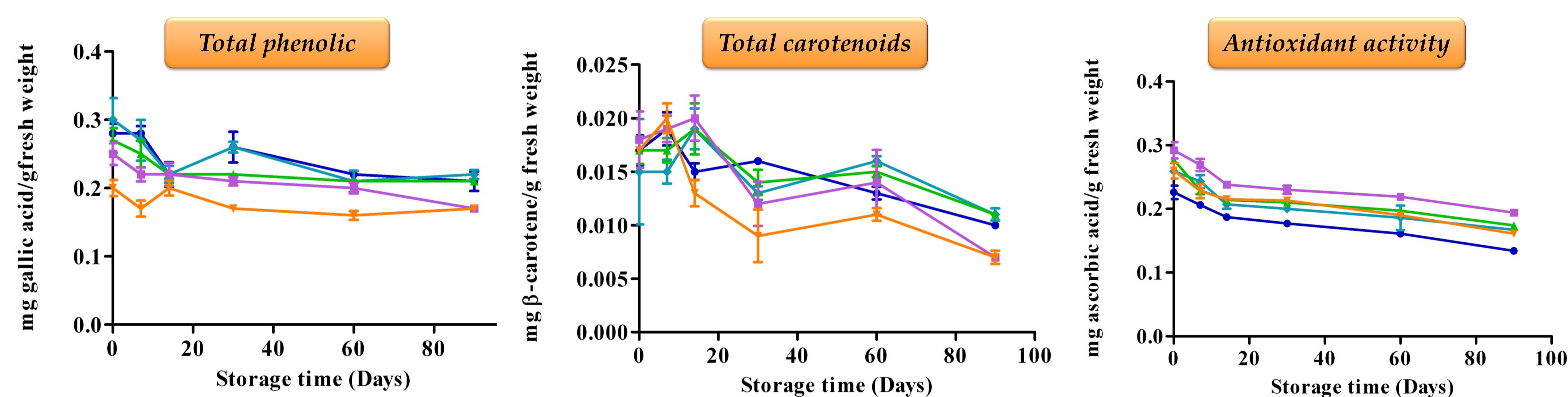


Figure 1. Total phenolic compounds, total carotenoids and antioxidant activity of peach puree at different pH values (— 2.5, — 3.0, — 3.5, — 4.0, — 4.5) stored at 4.5 °C.

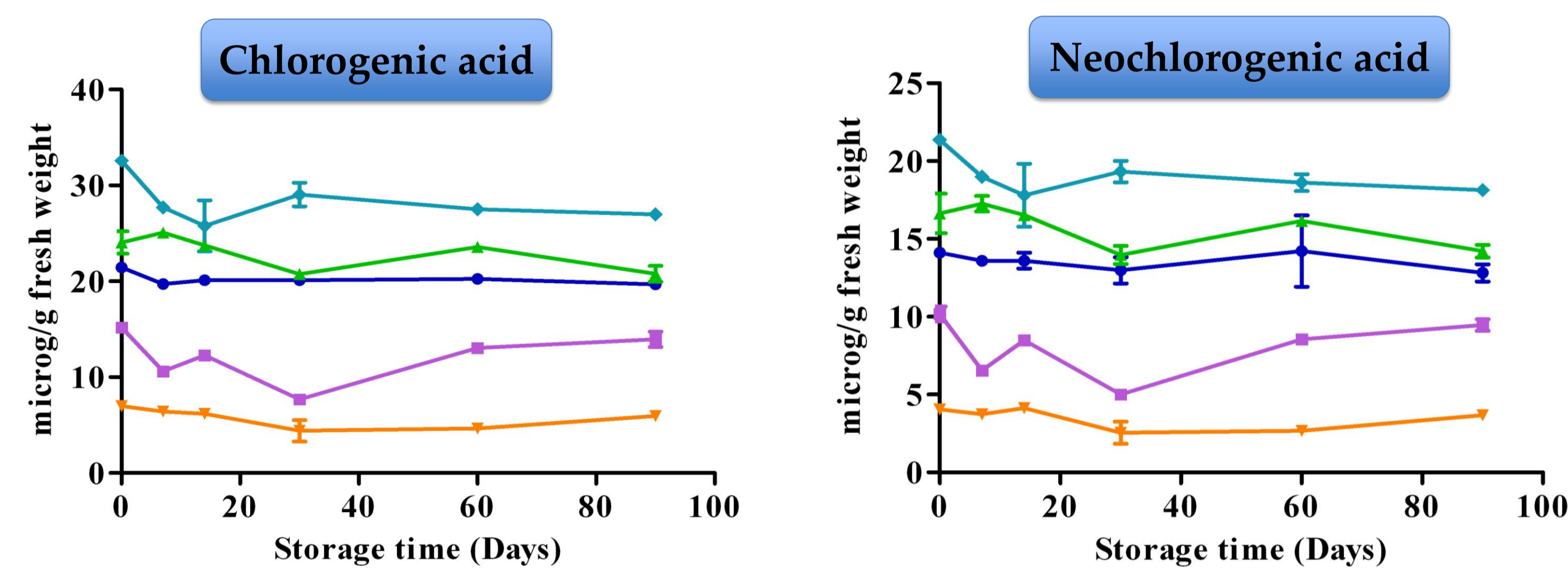


Figure 2. Individual phenolic content according with different pH values (— 2.5, — 3.0, — 3.5, — 4.0, — 4.5) for peach puree stored at 4.5 °C.

- ➔ Highest phenolics content were obtained from purees at lower pH values (2.5 and 3.0).
- ➔ Lowest carotenoids levels were observed at pH 4.5.
- ➔ Lowest total antioxidant activity was observed at pH 2.5.
- ➔ Total phenolics, carotenoids and antioxidant activity were better preserved at 4.5 °C than at 23 °C (not shown).
- ➔ Storage time had a negative impact on the retention of total phenolic, carotenoids and antioxidant activity.

- ➔ Chlorogenic and neochlorogenic acids levels were significantly different for each pH.
- ➔ Peach polpes with lower pH values (2.5, 3.0 and 3.5) presented higher chlorogenic and neochlorogenic acids contents.

## Conclusions

- ➔ Puree pH, in the range 2.5 to 4.5, did not affect the overall antioxidant activity, but the kinetics of changes in the extractability of phenolics was affected for chlorogenic and neochlorogenic acid at higher pH values.
- ➔ Storage temperature (4.5° and 23°C) reveals to be significant, where lower temperatures preserves better phenolics and carotenoids than room temperature for peach fruit.
- ➔ Total phenolics, carotenoids and antioxidant activity decreased during storage. Neochlorogenic acid and chlorogenic acid remained constant.

## Acknowledgements

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