

CARROT FLOUR OBTAINING WITH FUNCTIONAL PROPERTIES

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INTRODUCTION & AIM

Carrot (*Daucus carota*) is one of the most consumed vegetables in the world, and due to its high bioactive content, that provides important benefits for the health of the consumers. Cutting stress in carrots leads to the bioactive compounds, transforming this product into a functional ingredient and could be considered an excellent alternative to be processed as flour used as a nutraceutical ingredient. The objective of this present work was to optimize the flour process from carrots with high antioxidant content.

METHOD



With Chantenay carrots variety was work, obtained from Santiago del Estero producers, in Argentina.



Washed, disinfected with NaClO (200 ppm- 5 min), grated with a food processor and stored at 15°C-48h.



Dehydrated at 70°, 80° and 90°C. The optimal drying temperature was selected based on the moisture content, water activity (aw) and visual sensory characteristics after drying



The samples with the best visual acceptance were ground in a knife mill and sieved through to get the flour.

Determinations

The total phenolics (TPC) and antioxidants compounds (AC) of samples before dehydration and the flour were determined by Folin Ciocalteu (mg gallic acid/g) and DPPH (% Inhibition) methods respectively, and significant differences were observed between both.

RESULTS & DISCUSSION

- ✓ After 4 h-80°C a flour carrot with acceptable characteristics, 7-8 % of humidity and $a_w = 0.4$ was obtained; while at 70°C it took more than 5 h to reach that humidity level, and at 90°C the samples presented a darker unacceptable appearance.
- ✓ Fig 1 and Fig 2 shows the TPC and AC values.

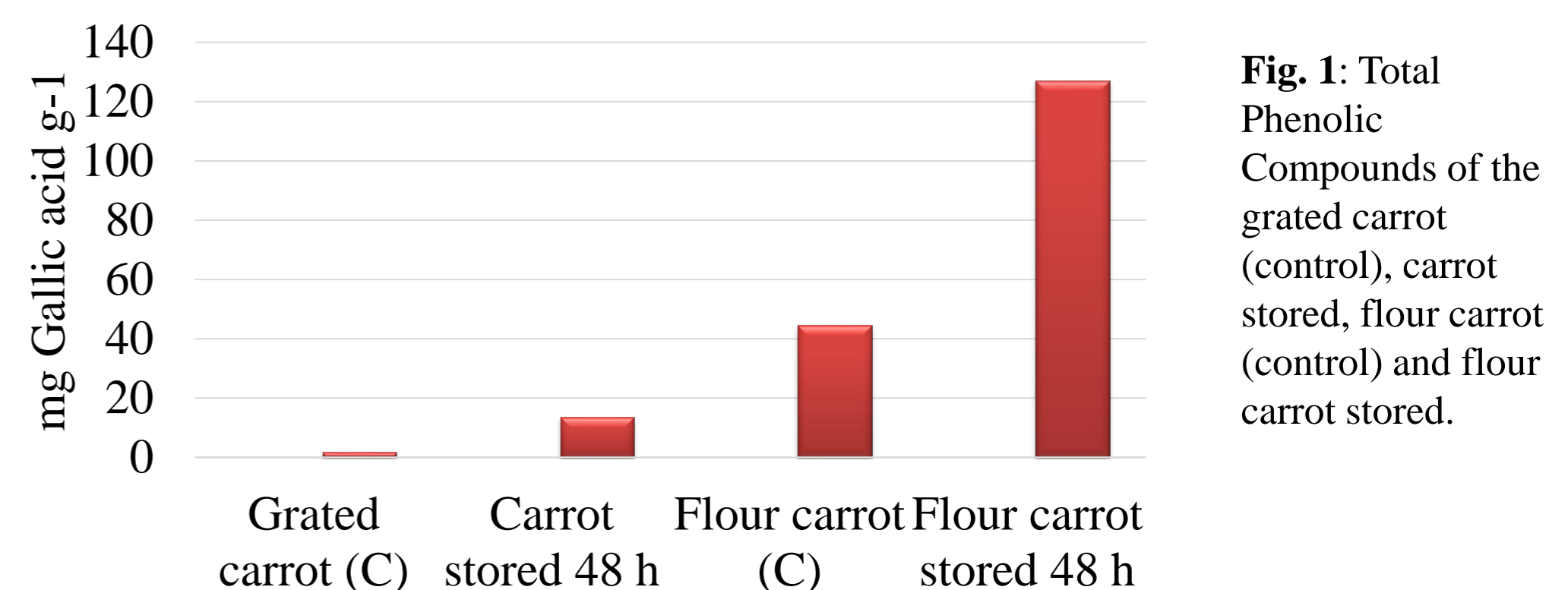


Fig. 1: Total Phenolic Compounds of the grated carrot (control), carrot stored, flour carrot (control) and flour carrot stored.

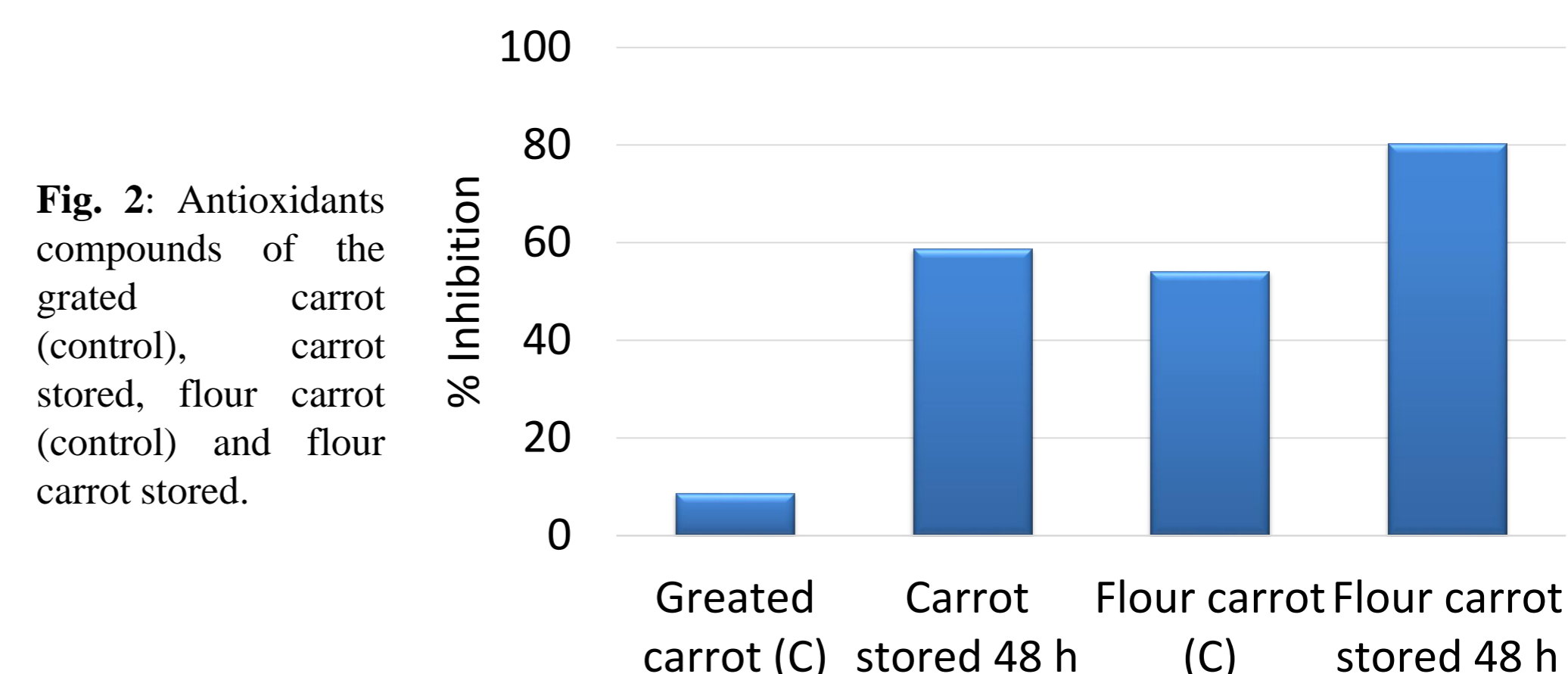


Fig. 2: Antioxidants compounds of the grated carrot (control), carrot stored, flour carrot (control) and flour carrot stored.

- ✓ The TPC values obtained were 2.77 ± 0.28 and 127.11 ± 5.34 mg gallic acid/g for the samples before dehydration and the flour respectively. The AC values obtained were 44% and 80% also for samples before and after drying respectively.

CONCLUSION

These results we could indicate that the product obtained could be used as a food ingredient in the formulation of innovative healthy foods.

FUTURE WORK

Flour obtained will be used as a functional ingredient for muffins, breads, cookies preparation.