

# POST-HARVEST EVALUATION OF PROMISSORY ACCESSIONS OF NATIVE CAPSICUM FROM NATIONAL INSTITUTE OF AGRARIAN INNOVATION - PERU

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## INTRODUCTION

The chili pepper (“aji”) is a native genetic resource from Peru. Its color, aroma, flavor and pungency are part of the history, food and customs in Peru. In recent years, new exotic varieties such as Paprika entered the Peruvian market for its cultivation and exportation. However, currently there are no improved varieties of native chilies for their production at the field according to demands of the gastronomic sector, the food industry or for its exportation to international market.

## OBJECTIVE

The objective of the study was to evaluate the agronomic behavior and post-harvest characteristics of five promising native chili peppers that are conserved by the National Institute of Agrarian Innovation from Peru.

## MATERIALS AND METHODS

The study began with the preparation of the seedlings of the chili pepper accessions “Miscucho” (PER 006945), “Tomatito rojo” (PER 006948), “Charapita amarillo” (PER 006952), “Dulce rojo” (PER 007093) and “Ayuclo” (PER 006030), to grow under agro-ecological conditions of Experimental Stations of Donoso in Huaral, Vista Florida in Chiclayo, and the farm of Agroexport Topara Company (Figure 1). The production at Donoso and Vista Florida locations was conventional, unlike in Topara where the production was organic. Post-harvest analyzes corresponding to nutritional composition, bioactive compounds, vitamin C, carotenoids, total phenolic compounds, total flavonoids and antioxidant activities by DPPH and ABTS, as well as other quality parameters in chili peppers, were performed according to validated methodologies (Figures 2-5).



Figure 1. Chili peppers cultivation locations along the Peruvian coast

## RESULTS

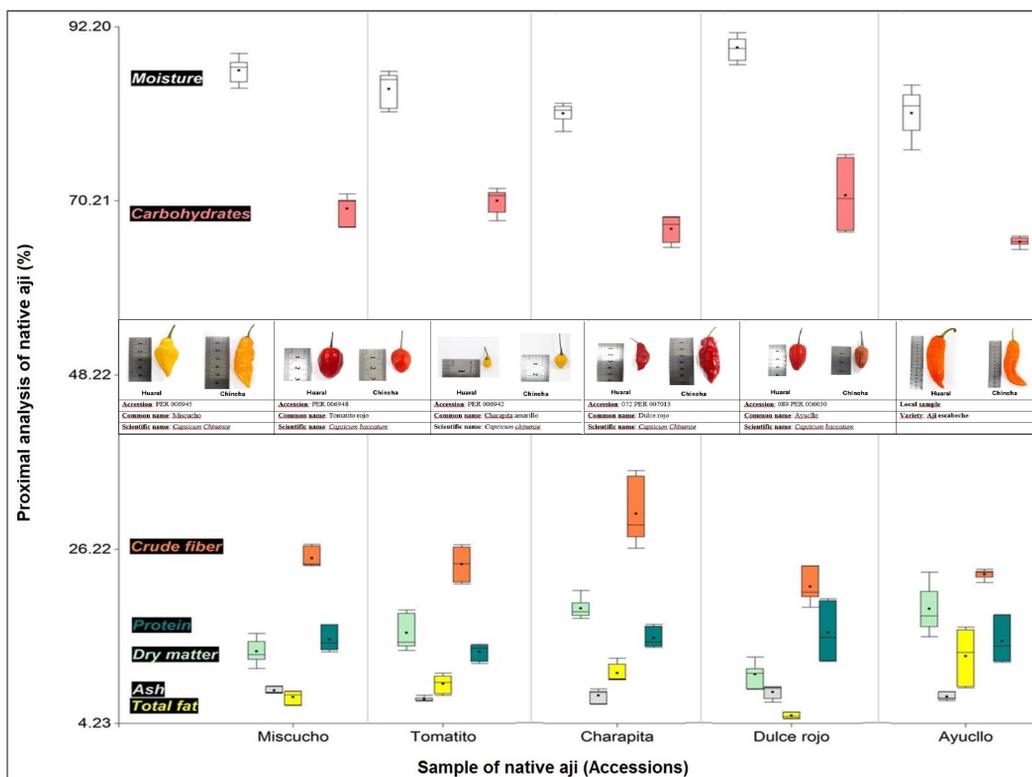


Figure 2. Proximate analysis of native chili peppers (2016-2017)

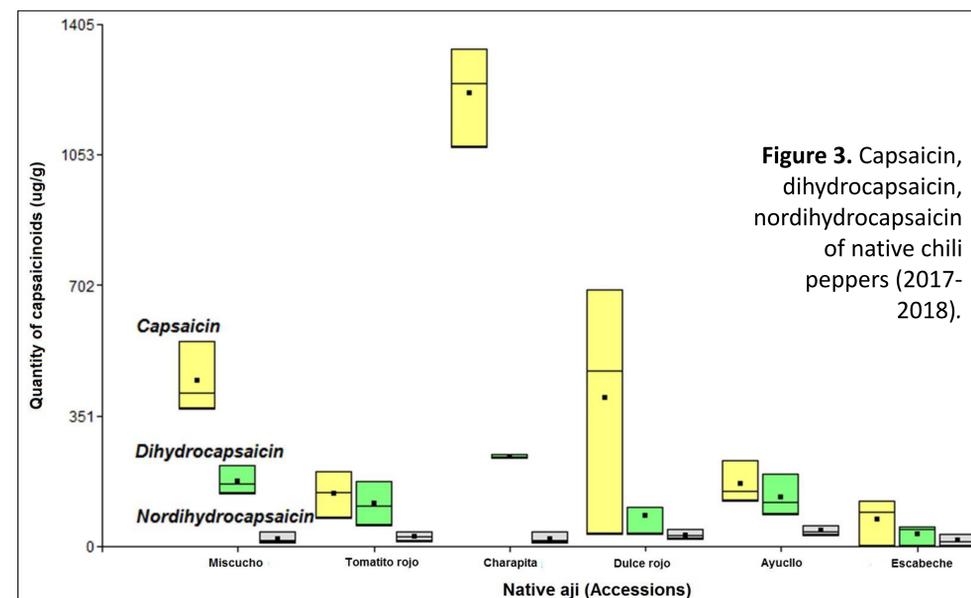


Figure 3. Capsaicin, dihydrocapsaicin, nordihydrocapsaicin of native chili peppers (2017-2018).

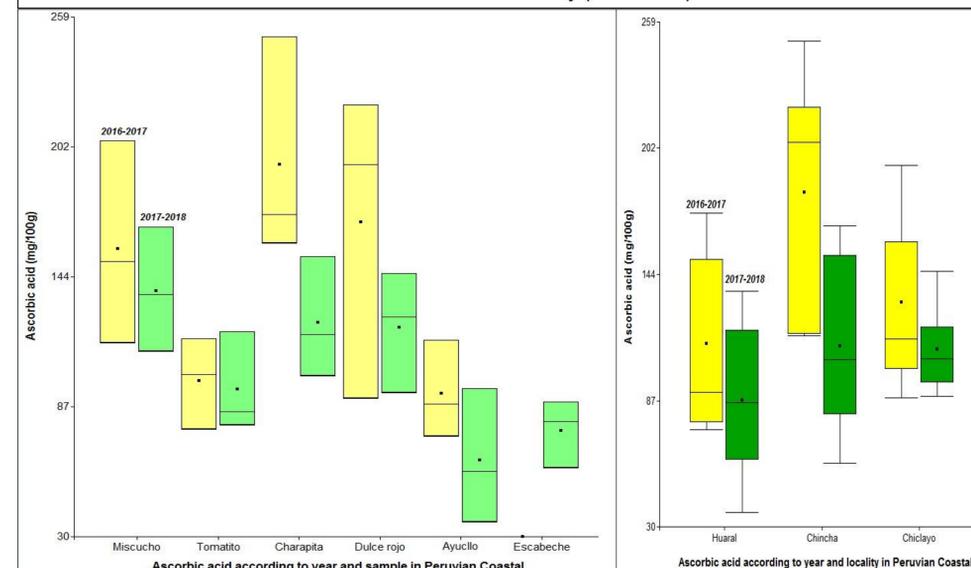


Figure 4. Ascorbic acid by year and locality of native chili peppers grown at the Peruvian coast (2016-2018).

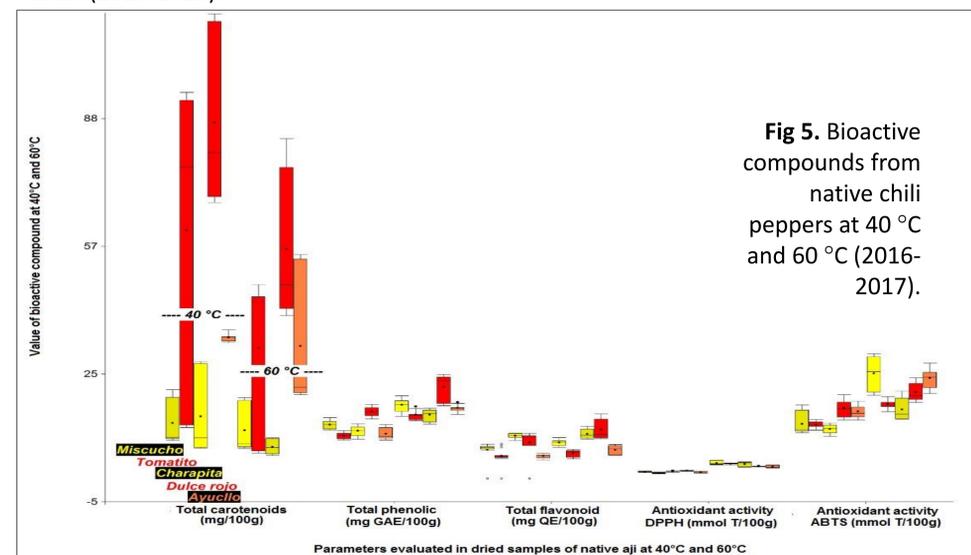


Figure 5. Bioactive compounds from native chili peppers at 40 °C and 60 °C (2016-2017).

## CONCLUSIONS

The five promissory accessions of chili peppers (“aji”) have shown interesting functional properties and nutritional composition to continue its breeding under certain agro-ecological condition in the Peruvian coastal.

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