

Differences in the total phenolic content of yellow mashua (*Tropaeolum tuberosum*) according to cooking methods

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INTRODUCTION & AIM

Yellow mashua (*Tropaeolum tuberosum*) is an Andean tuber from Peru, rich in phenolic compounds with antioxidant and functional properties. Cooking may alter these bioactive compounds, affecting its nutritional value.



Aim: Compare the phenolic content of the peel and flesh of yellow mashua using different cooking methods.

METHOD

STEP 1: Samples exposed to treatments

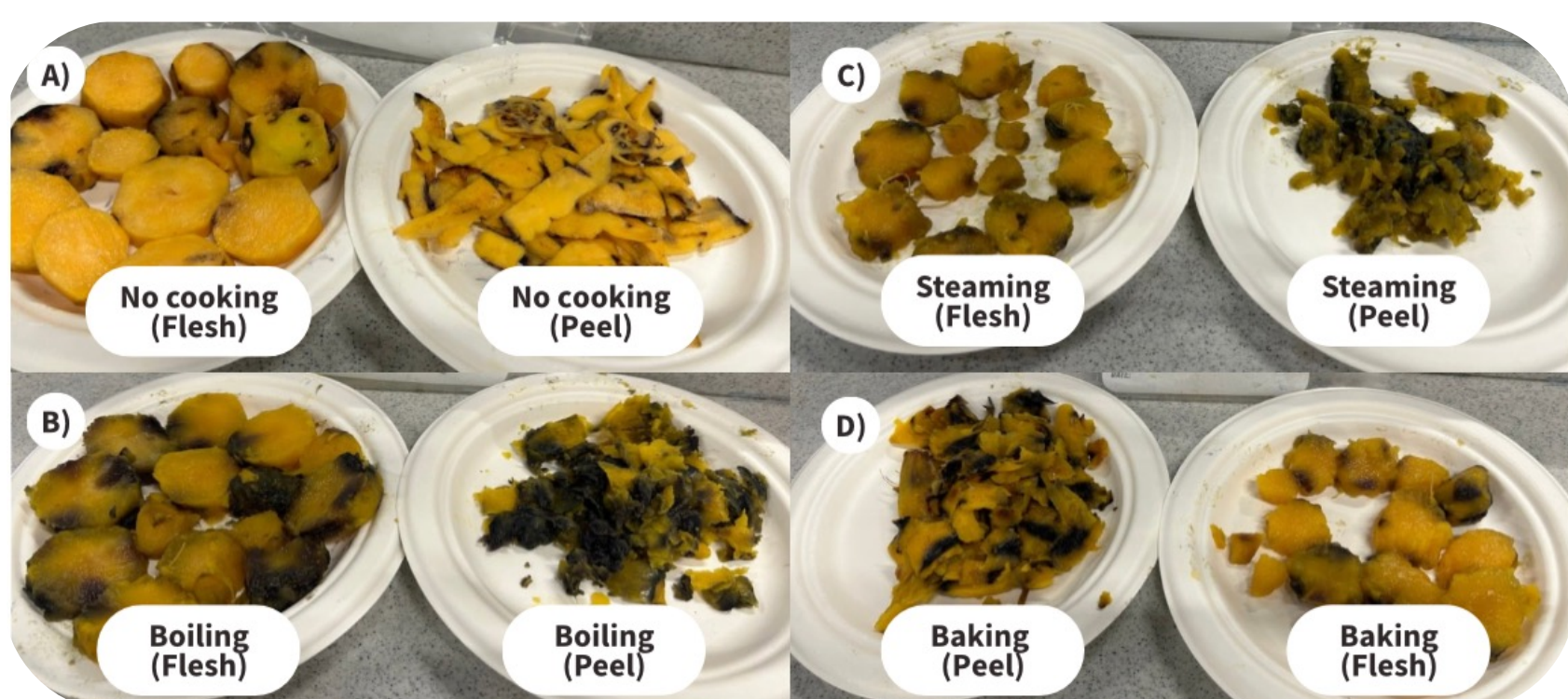


Figure 1. Peel and flesh samples after treatments. A) No cooking (raw); B) Boiling (96°C 15 min); C) Steaming (96°C 20 min); D) Baking (180°C 25 min)

STEP 2: Samples dried, ground, and sieved

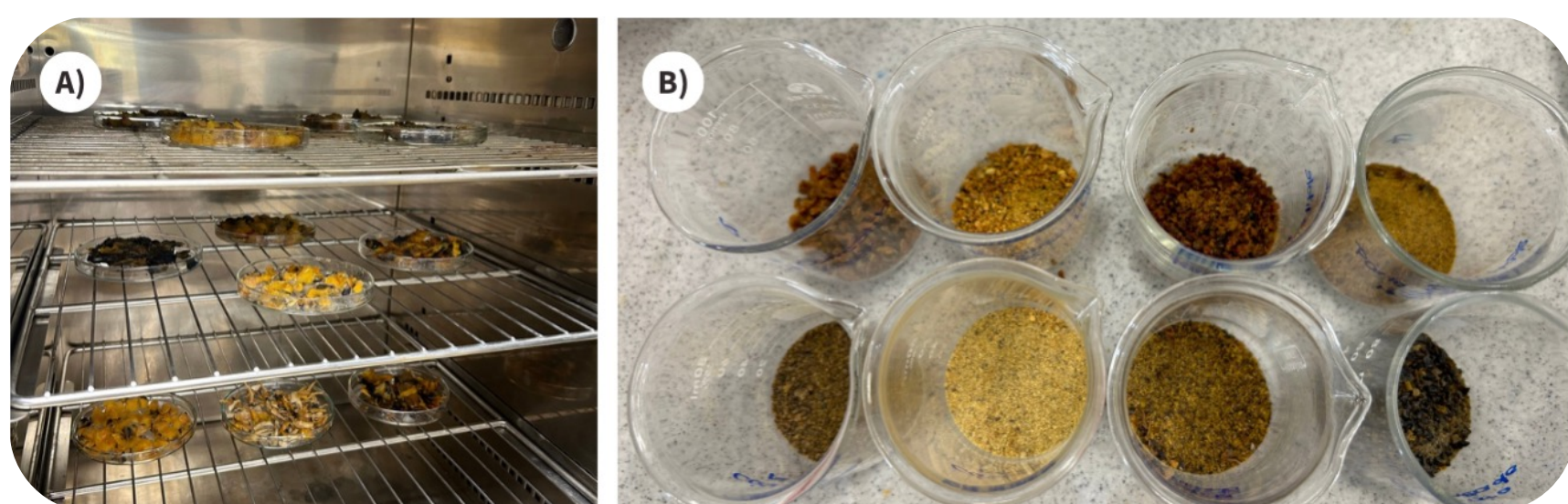


Figure 2. Experimental procedure of samples. A) Dried (40°C 48 hours); B) Ground and sieved

STEP 3: Extracts prepared with ethanol

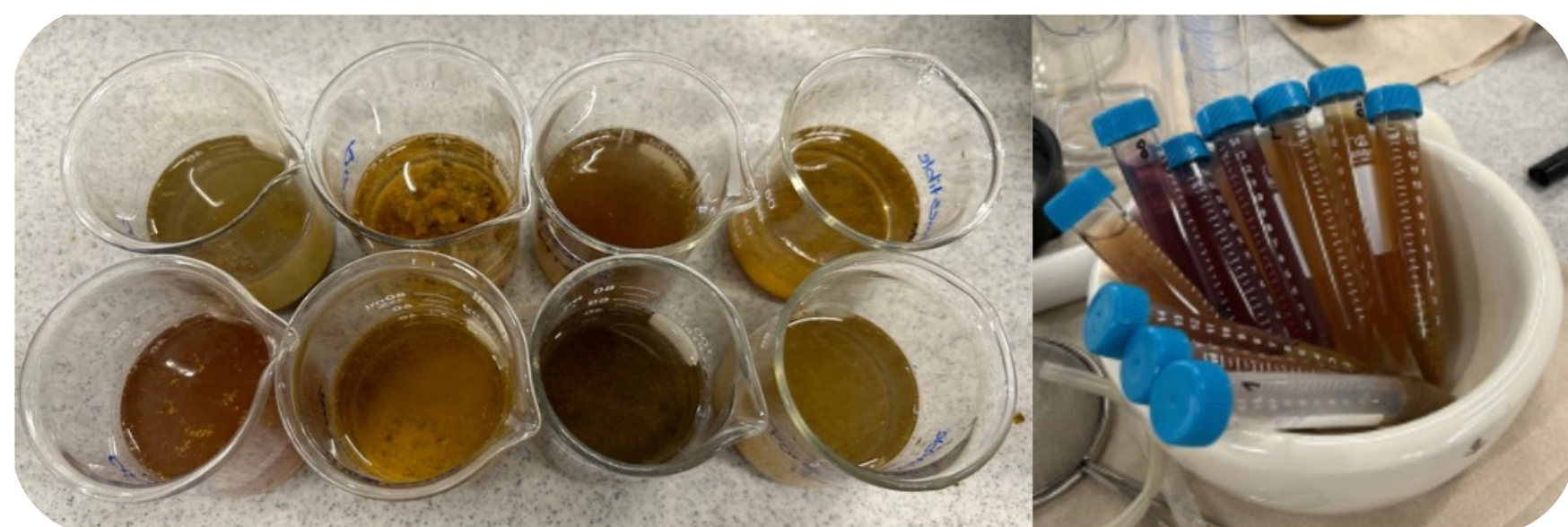


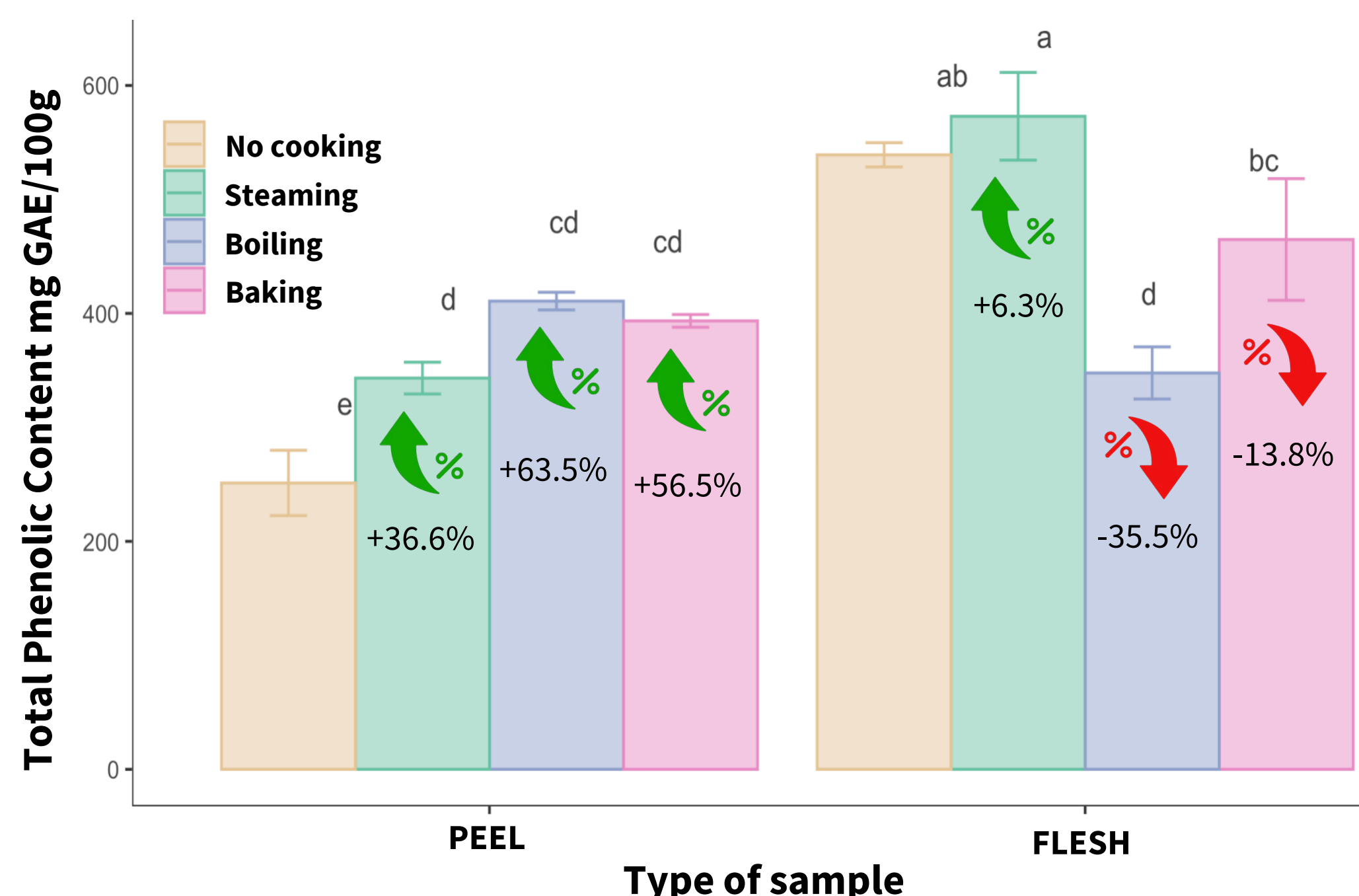
Figure 3. Extract preparation (ethanol 50% in distilled water, ratio 1:10)

STEP 4: Phenolic content quantification



RESULTS & DISCUSSION

DIFFERENCES IN TOTAL PHENOLIC CONTENT IN PEEL AND FLESH COMPARED TO “NO COOKING” SAMPLE



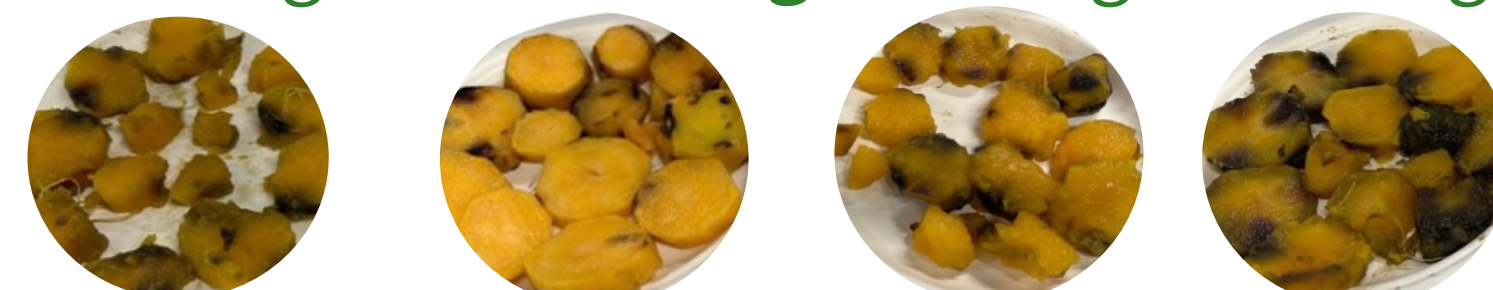
PEEL

boiling > baking > steaming > no cooking



FLESH

steaming > no cooking > baking > boiling



Results agree with published studies of sweet potato, where steaming increased phenolics, but differ from potato, where boiling had a stronger effect. Differences may relate to the matrix composition. No data was found for the peel.

CONCLUSION

MAIN FINDINGS:

- ✓ Boiling enhanced phenolics in the peel
- ✓ Steaming best preserved them in the flesh.

Cooking affected the phenolic content of yellow mashua. Using proper cooking methods can help maintain its functional and nutritional value.

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