

Nutritional, elemental and toxicity assessment of three tropical fruits pulps and seeds

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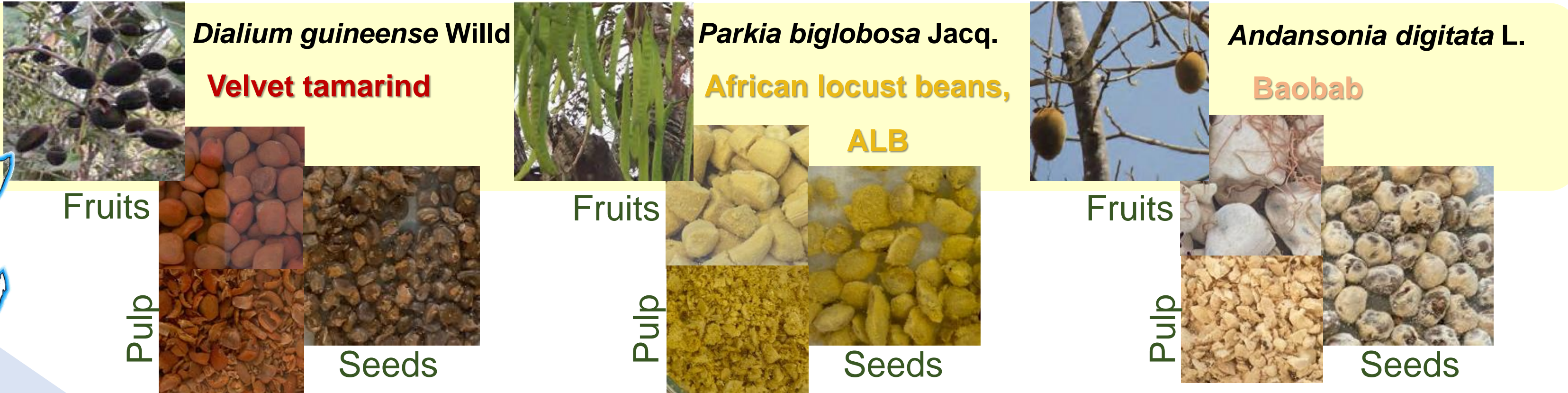
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INTRODUCTION

Indigenous African plants



Medicinal proposes

Due to their:

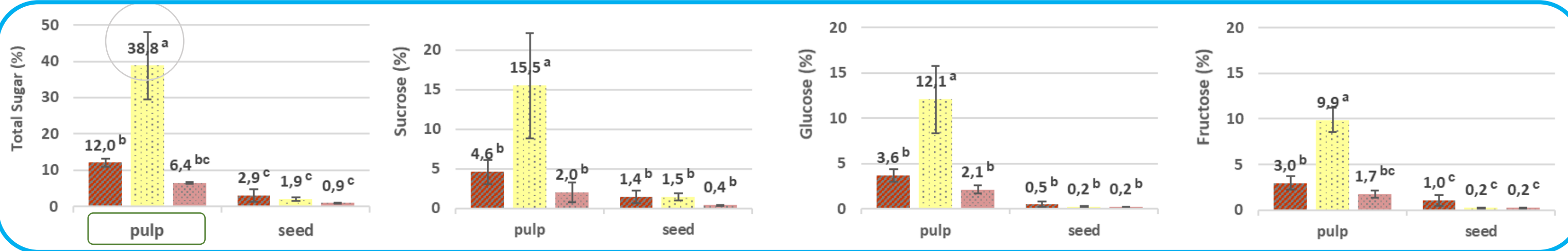
Micro & macro nutrients
Bioactive compounds

METHODS

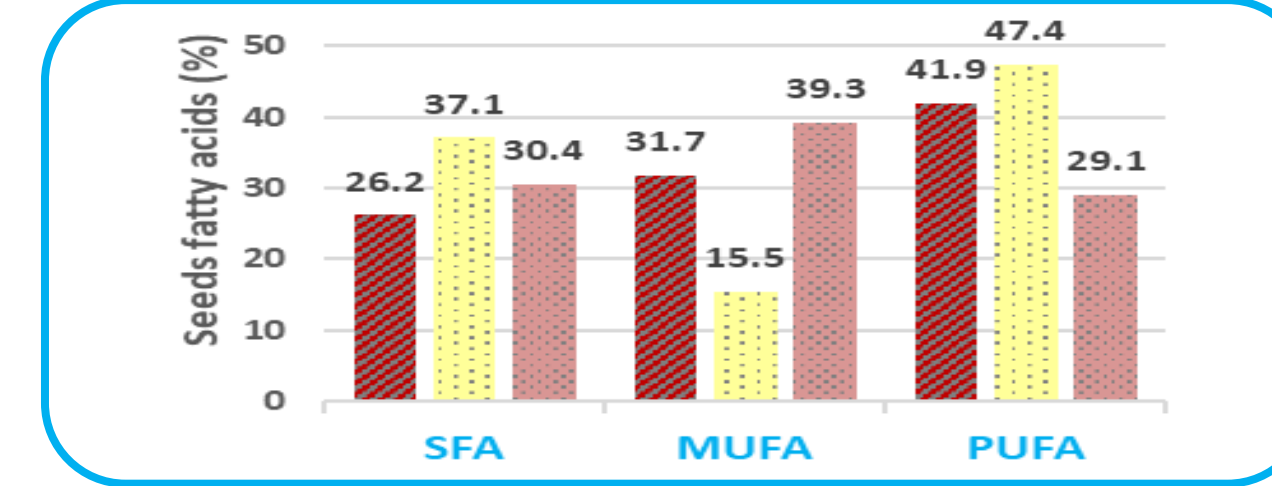
Sugars profile: HPLC-RI. Organic acids & phenolic compounds profiles and amygdalin: HPLC-PDA. Soluble and insoluble fibre: enzymatic method. Elemental analysis: X-RF. Total phenolic compounds (Folin Ciocalteu assay) and antioxidant capacity (DPPH and FRAP): spectrophotometry. Protein content (Kjeldahl) and fat (Soxhlet extraction). Fatty acids profile: GC-FID.

RESULTS

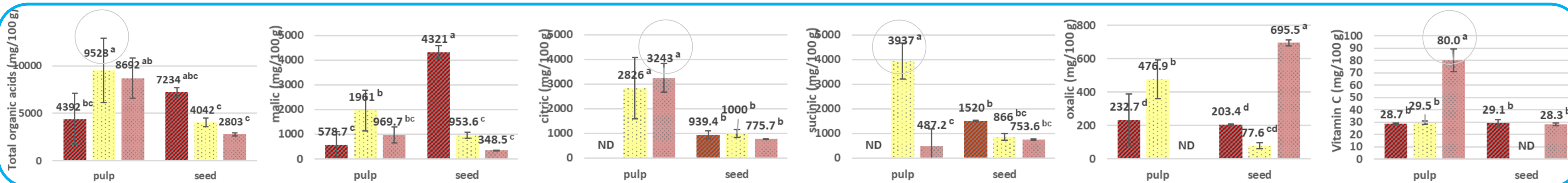
Sugars



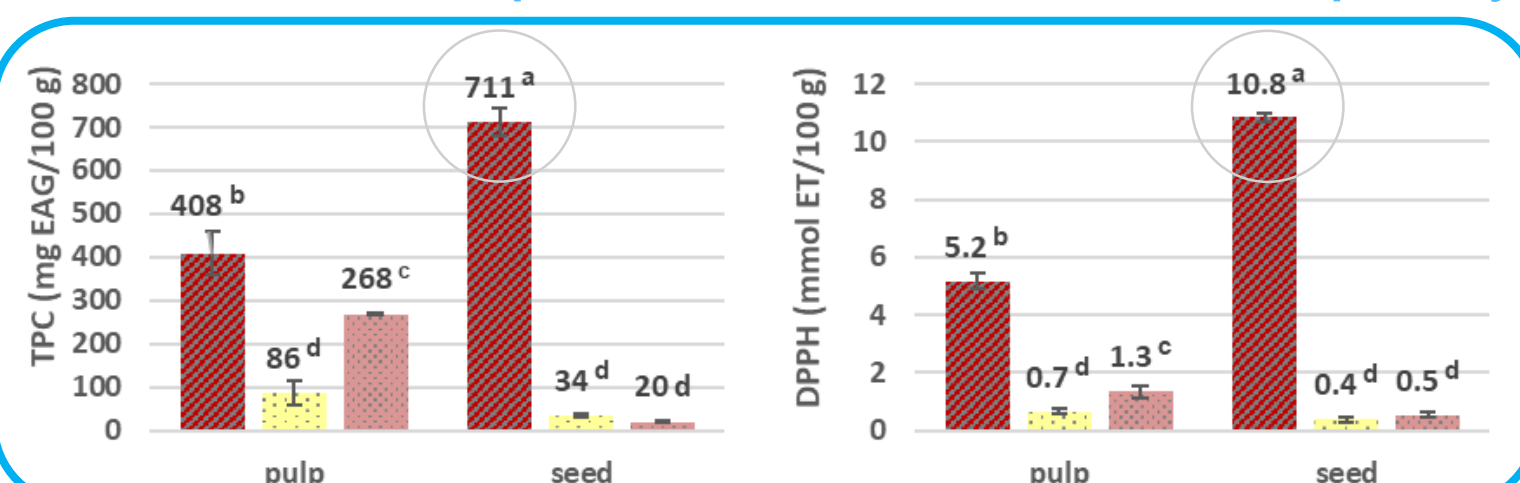
Seeds Fatty Acids



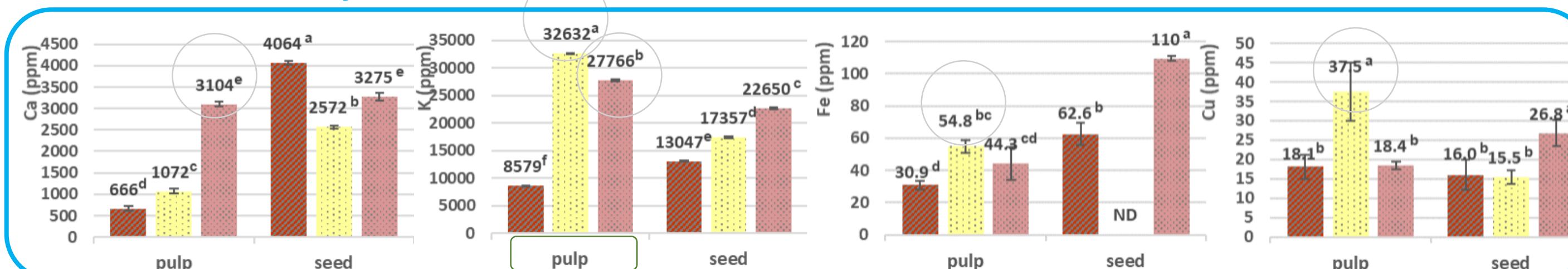
Organic Acids



Phenolic Compounds & Antioxidant Capacity



Elemental Analysis



Averages and standard deviations by one-way ANOVA, Scheffé test applied for p ≤ 0.05 and n=3 (Statistica software). In each graph the same index, after averages, means that there are no significant differences. ND - not detected.

■ Velvet ■ ALB ■ Baobab

CONCLUSIONS

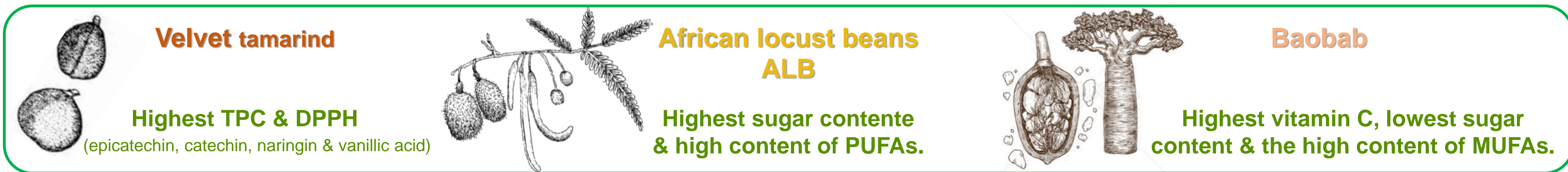
Bioactive compounds quantified in fruit pulp & seeds

Vitamin C in **baobab**. Toxicity: amygdalin was not detected. Hydroxycinnamic acids (caffeic, coumaric, chlorogenic, ferulic), Hydroxybenzoic acids (gallic, vanillic, hydroxybenzoic), other phenols (quercetin, catechin, epicatechin, rutin, naringin, procyanidin, kaempferol) in **velvet tamarind**. Fatty acids from the **ω3** and **ω6** series in **ALB**.

Highest values

Sugar and organic acids in **African locust beans** pulp due to sucrose and succinic. TPC and antioxidant capacity in **Velvet tamarind** due to epicatechin, rutin, naringin. **Baobab** pulp in Ca and K. **African locust beans** pulp in K and Cu. Vitamin C in **baobab** pulp: 80.0 mg/100 g (RDA_{adult male}: 70 mg Vitamin C).

Fruit pulps are richer in sugars and organic acids while seeds are richer in protein and fat.



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