



# Nutritional value and acceptability of lactic acid fermented sweetpotato leaves utilized as vegetables

The Markets, Processing, and Utilization  
Community of Practice Meeting

**Dar Es Salam, Tanzania**

14–16<sup>th</sup> March 2016

# Authors



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## Introduction

- Sweetpotatoes play important food security role.
- Mainly roots are utilized in East Africa while leaves and vines utilized as animal feed.
- Leaves are highly perishable and only acceptable to a few users in Kenya unlike other countries where they are generally consumed.
- Sweetpotato leaves are good sources of vitamins A and C, protein, iron and zinc.



## Introduction

- Recent introduction and promotion of orange-fleshed sweetpotatoes in EA, Kenya included.
- Increased utilization of leaves in addition to roots would enhance the nutritional contribution of the crop to the human diet significantly-complete!!!!
- Especially in terms of increased **vitamin C** and **protein** intake.



## Introduction

- Traditional preparation methods can be in order, but other value addition methods may be necessary.
- Lactic acid fermentation known to enhance nutrient availability provides an alternative process of producing a value added product from the leaves.
- Nutritional value and acceptability of lactic acid fermented sp leaves in Kenyan context remains unknown.
- Preliminary partial results of trials from Transmara East presented.

# Methodology

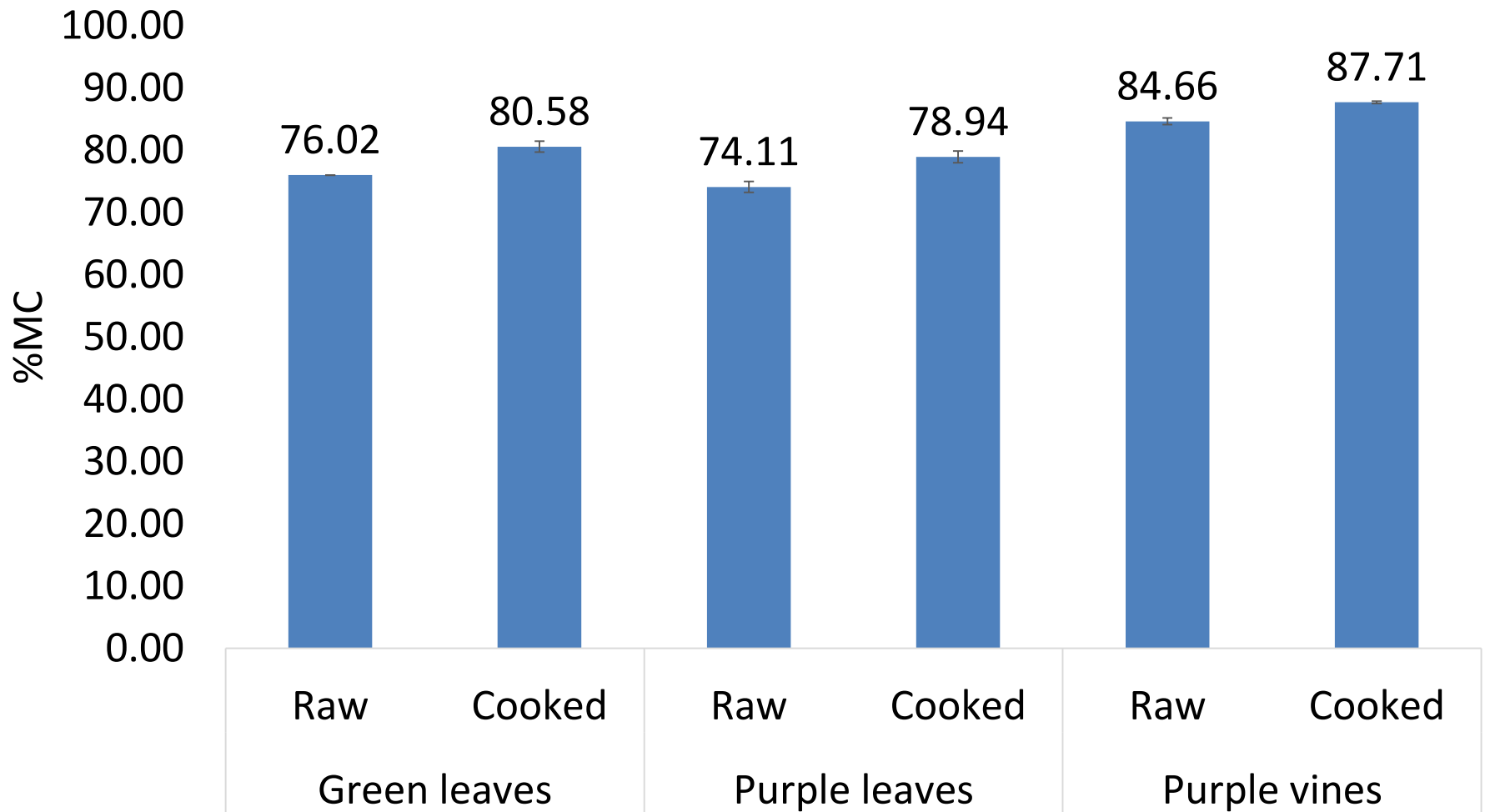


- Current presentation part of ongoing research- only a section is presented.
- Three varieties commonly grown in Transmara , Narok County harvested from farmers-***purple leaves, purple vines and green leaves.***
- Leaves analysed for protein, moisture, oxalates, vitamin A & C-
- Analysis on raw and cooked (traditional boiling)- sensory evaluation carried out.
- Lactic acid fermentation, minerals on-going



# Results-MC

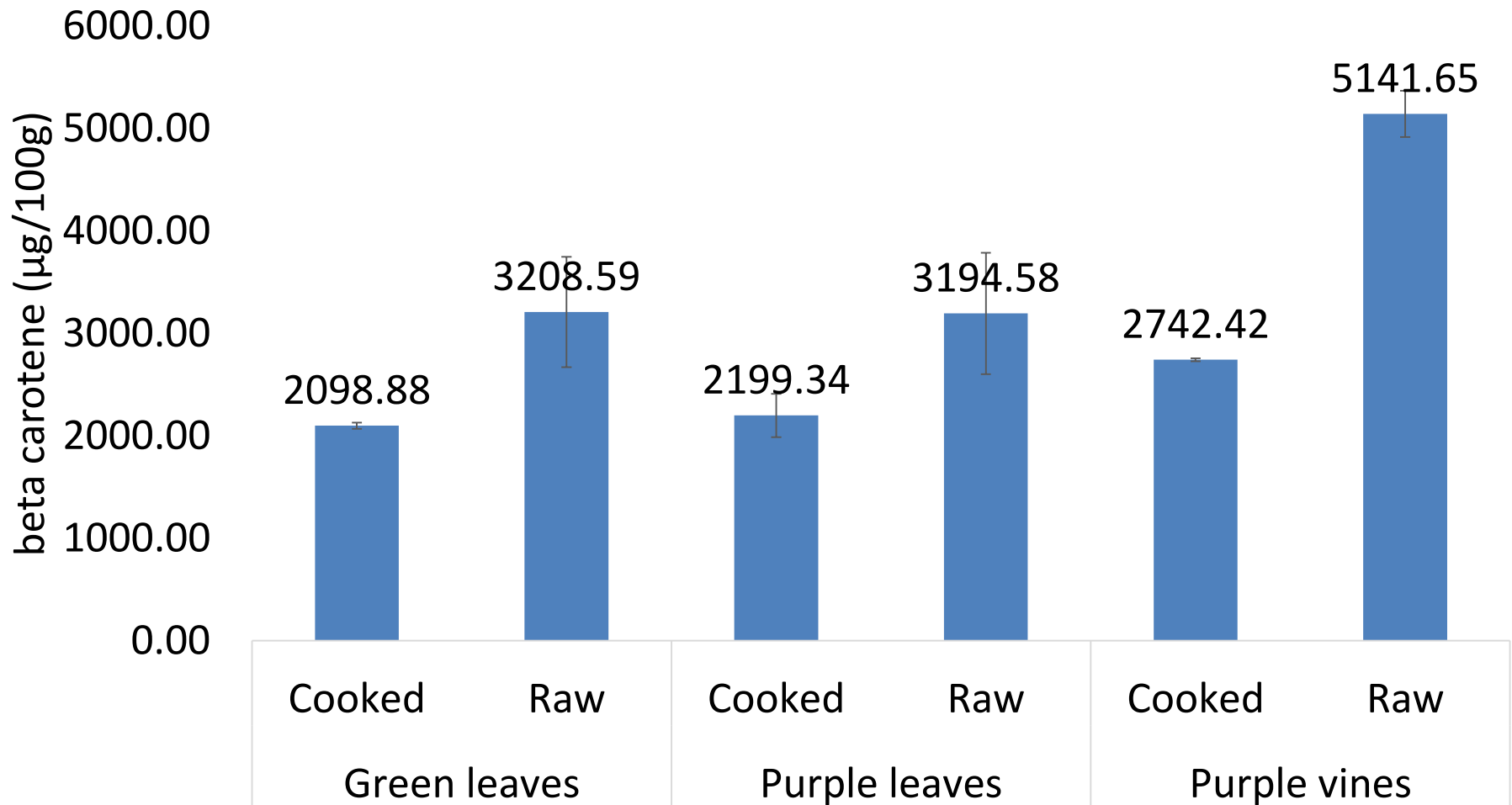
- High moisture foods as other vegetables; sig differ with variety





## Results–Beta carotene

- Sig. ( $p < 0.05$ ) high in purple vines; retention 53-69%

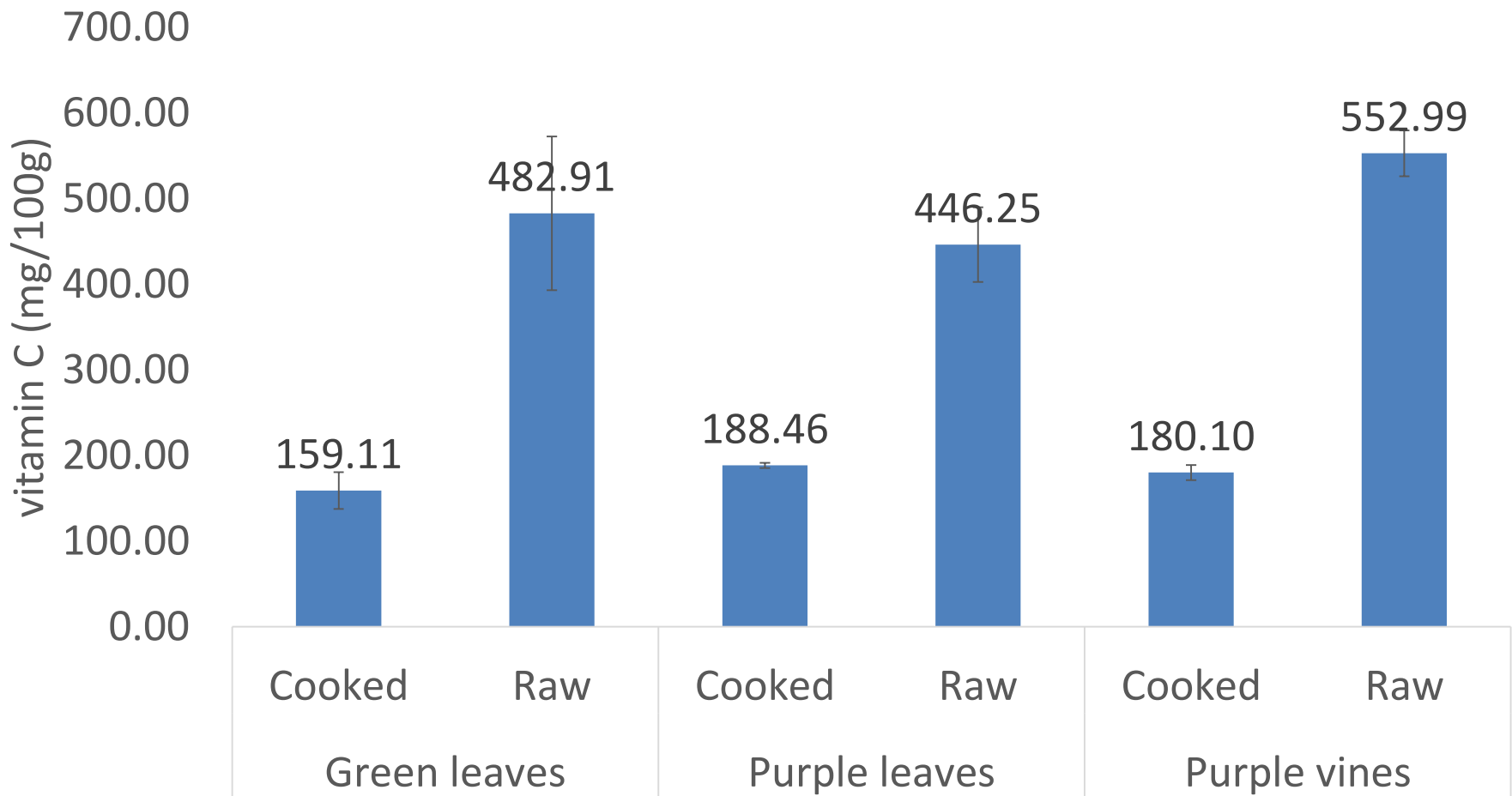




# Results–Vitamin C



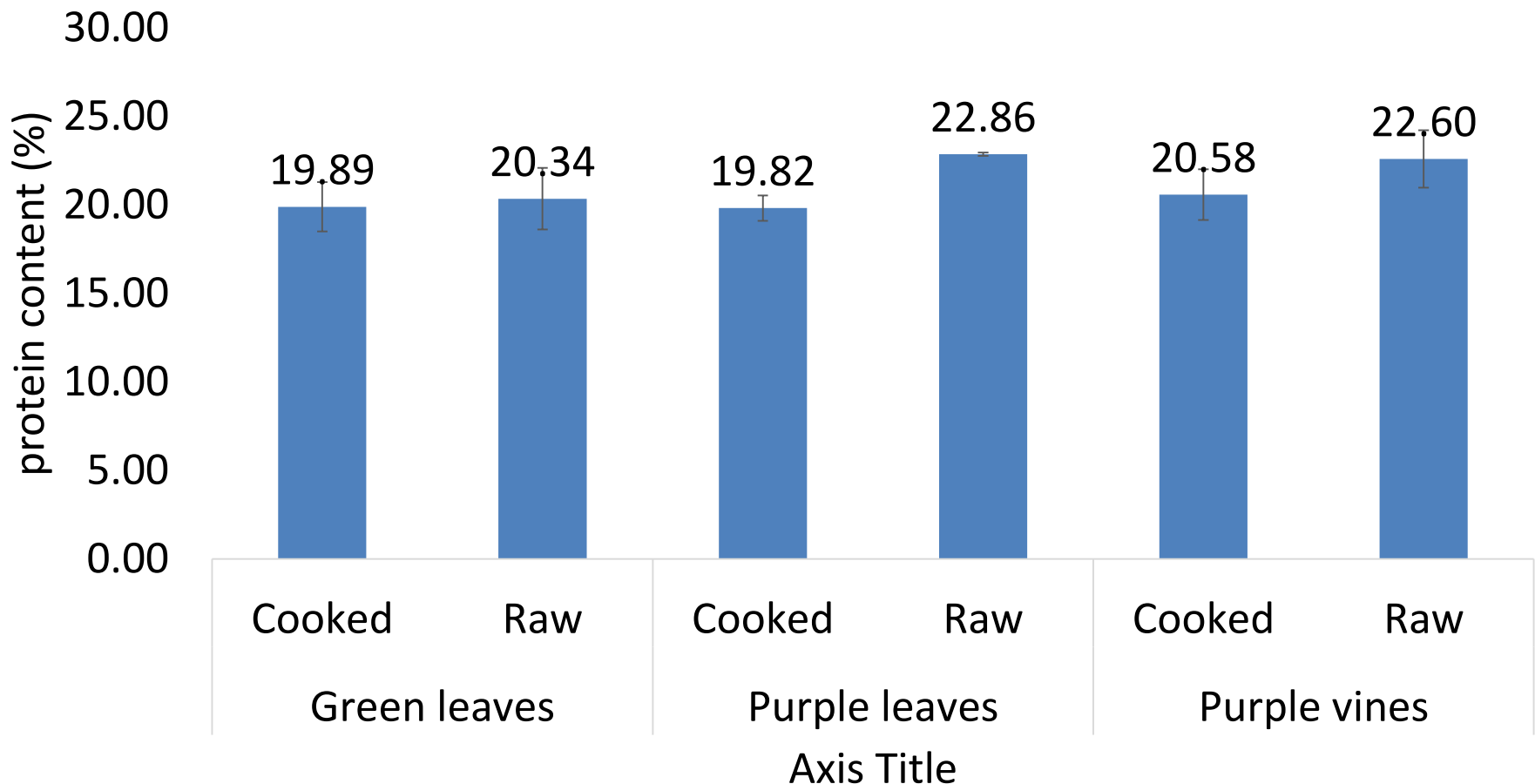
- No sig. with variety; high vit C; retention of 32 and 42%





# Results-Protein

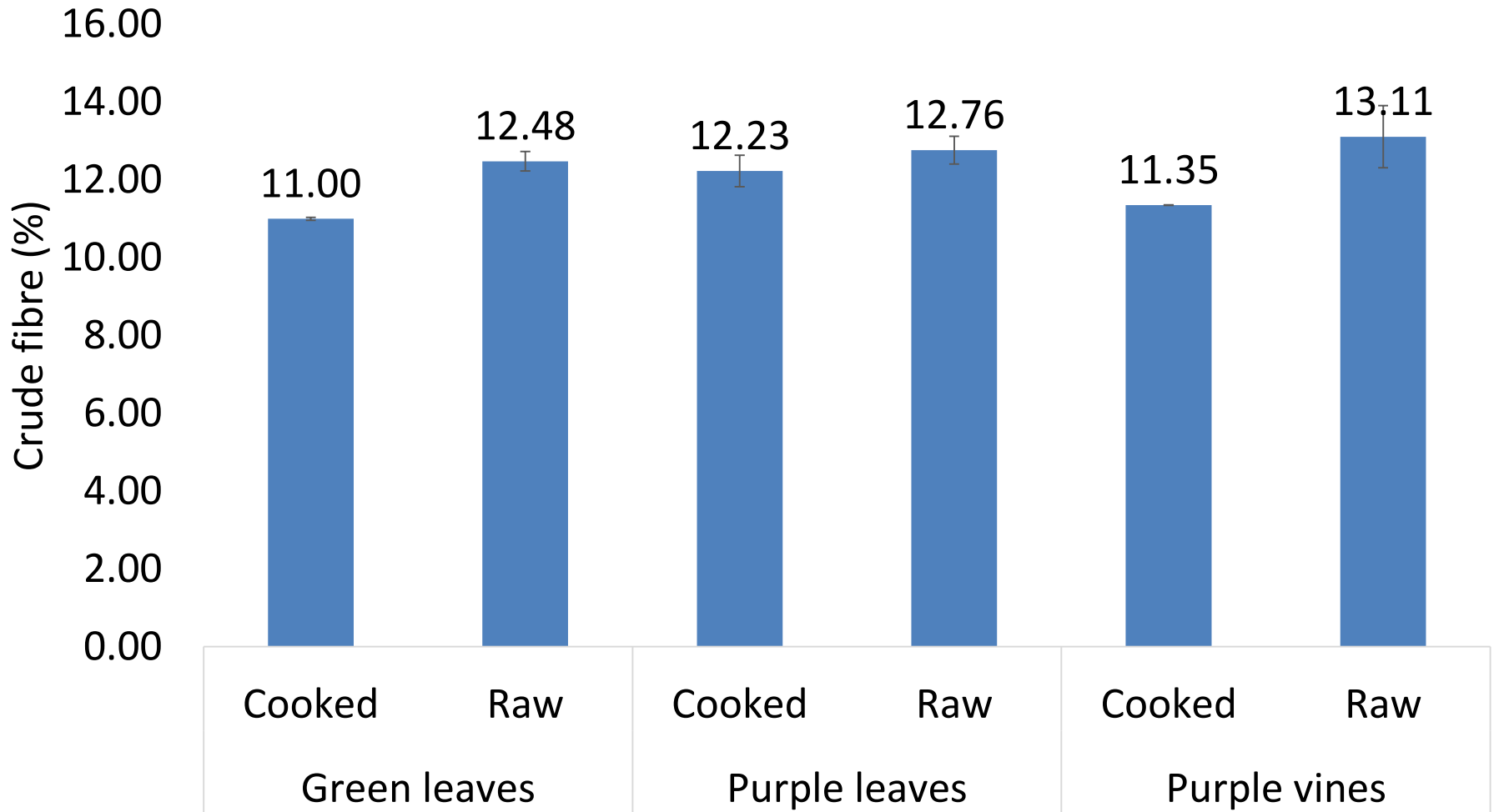
- No sig. difference with variety or reduction on boiling





# Results-Protein

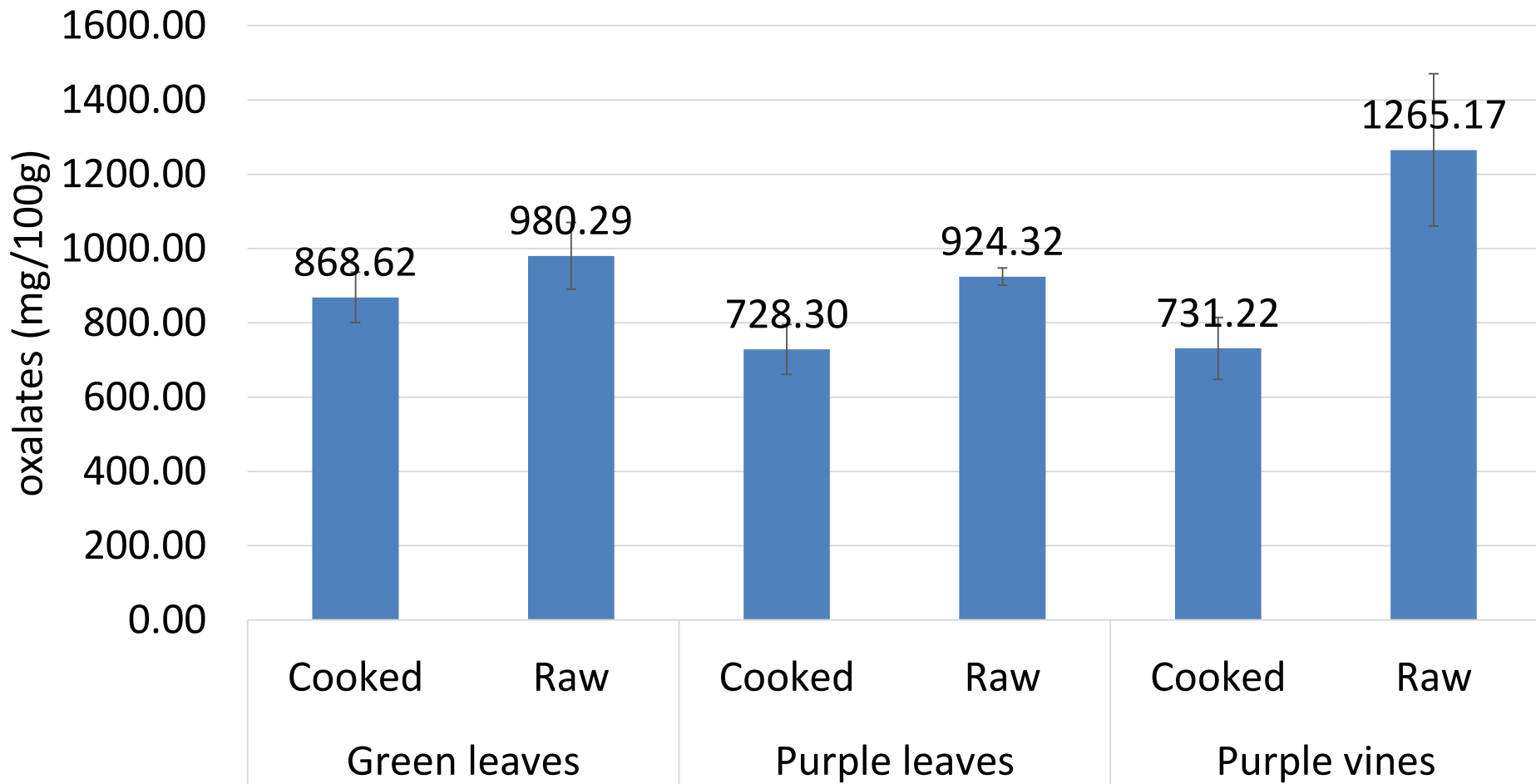
- High fibre; some reduction??



# Results–Oxalates



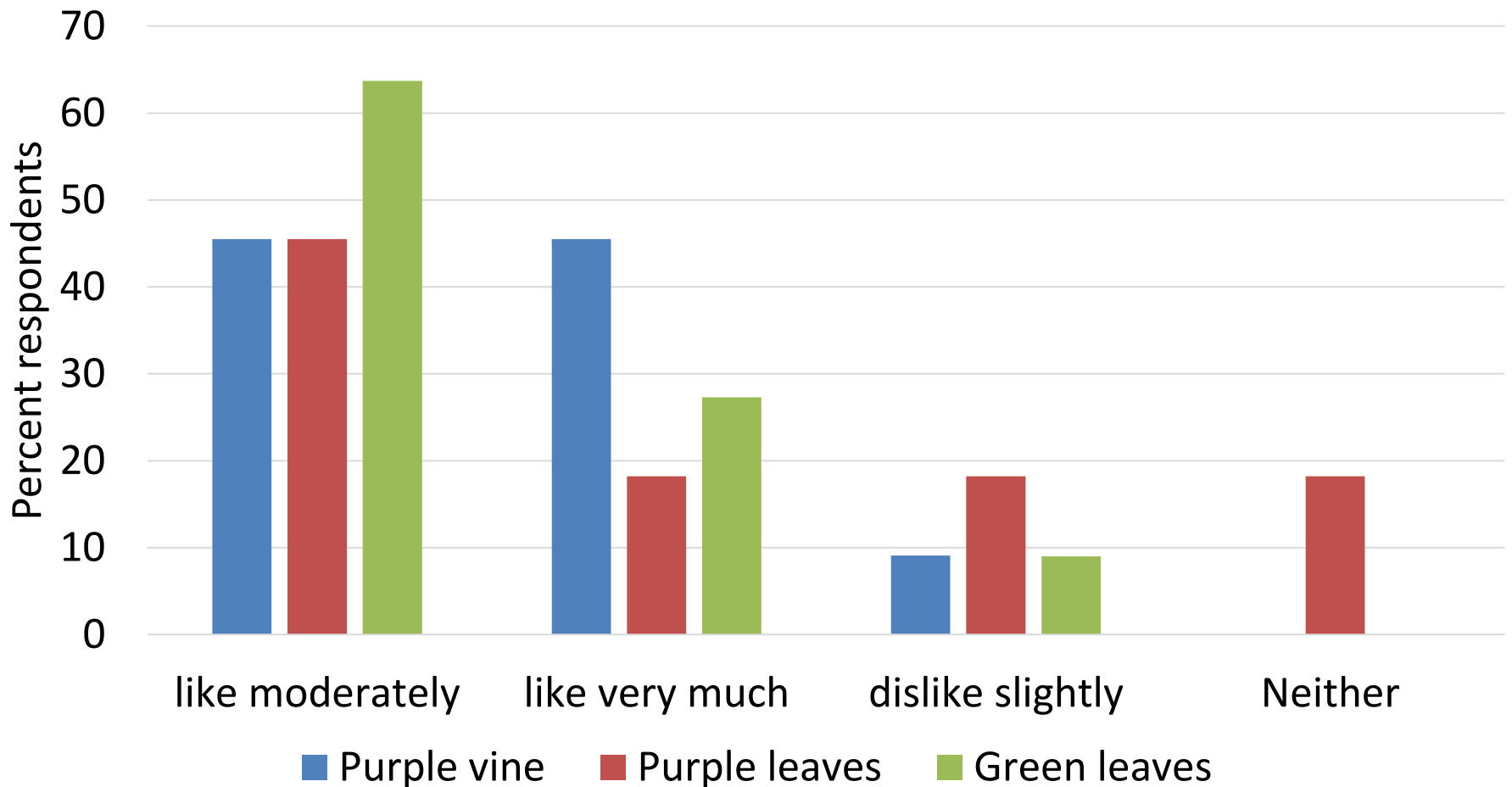
- No sig difference with variety; Sig. reduction in purple varieties





## Sensory-Taste

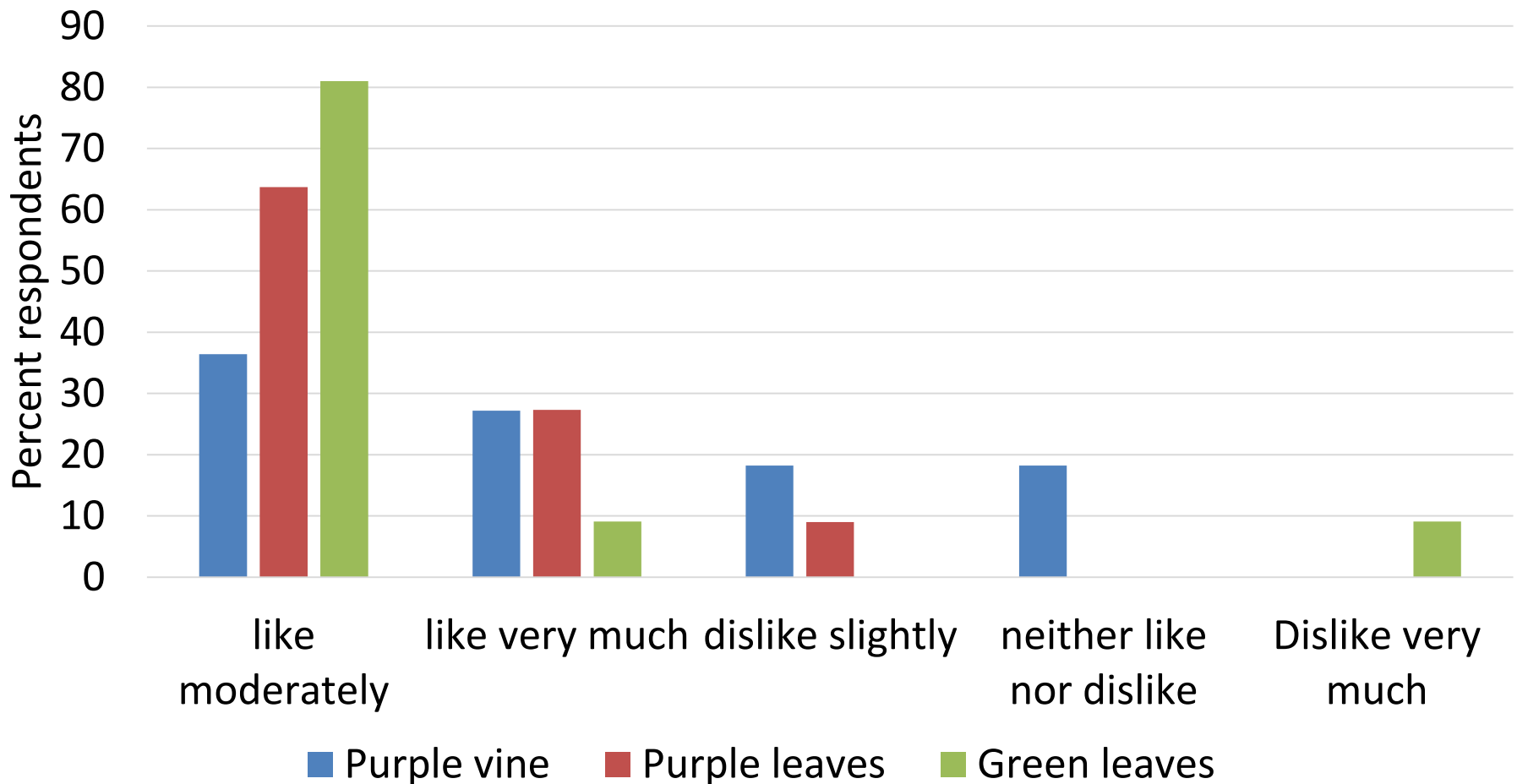
- Liked moderately





# Sensory-Flavor

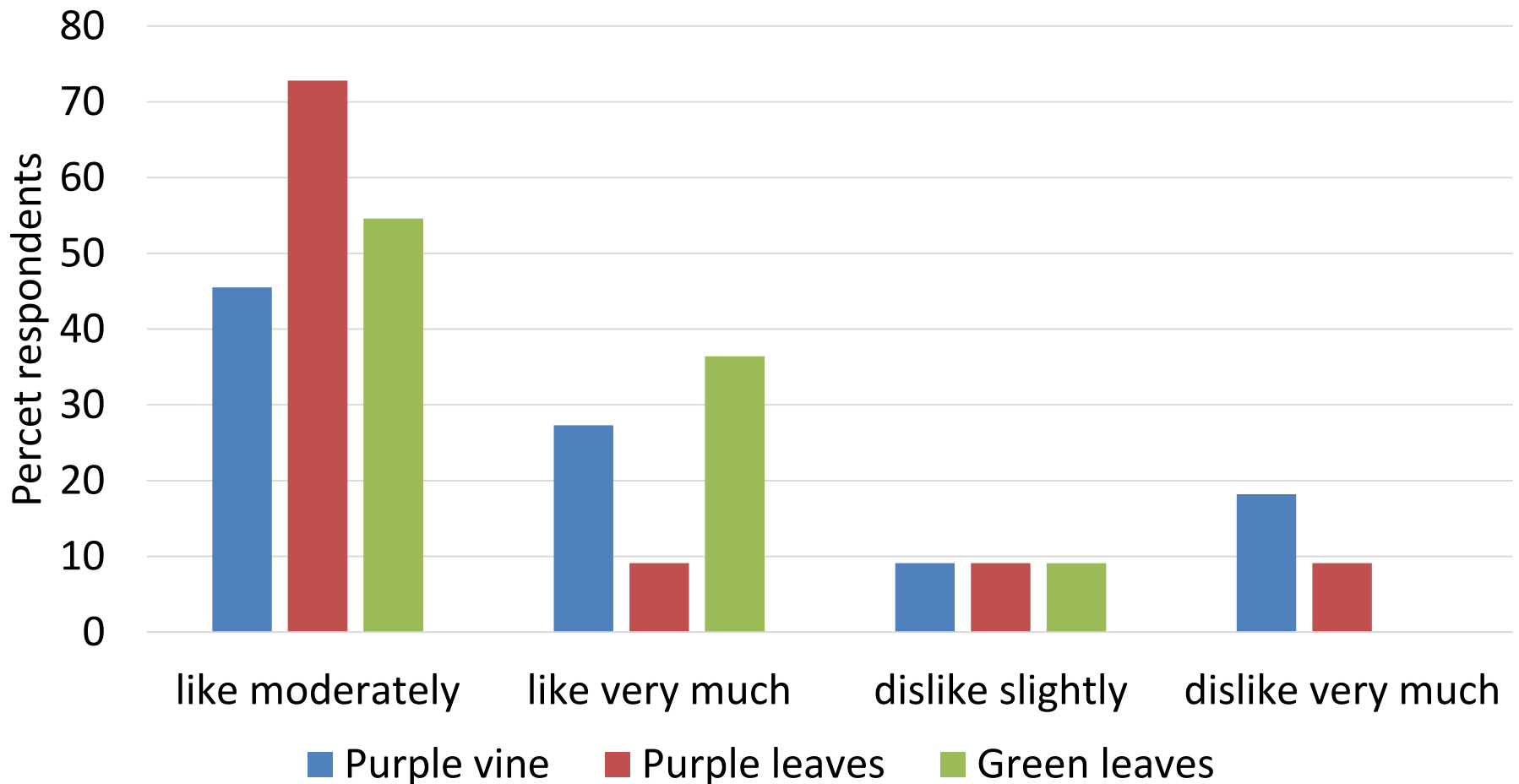
- Liked moderately





# Sensory–Appearance

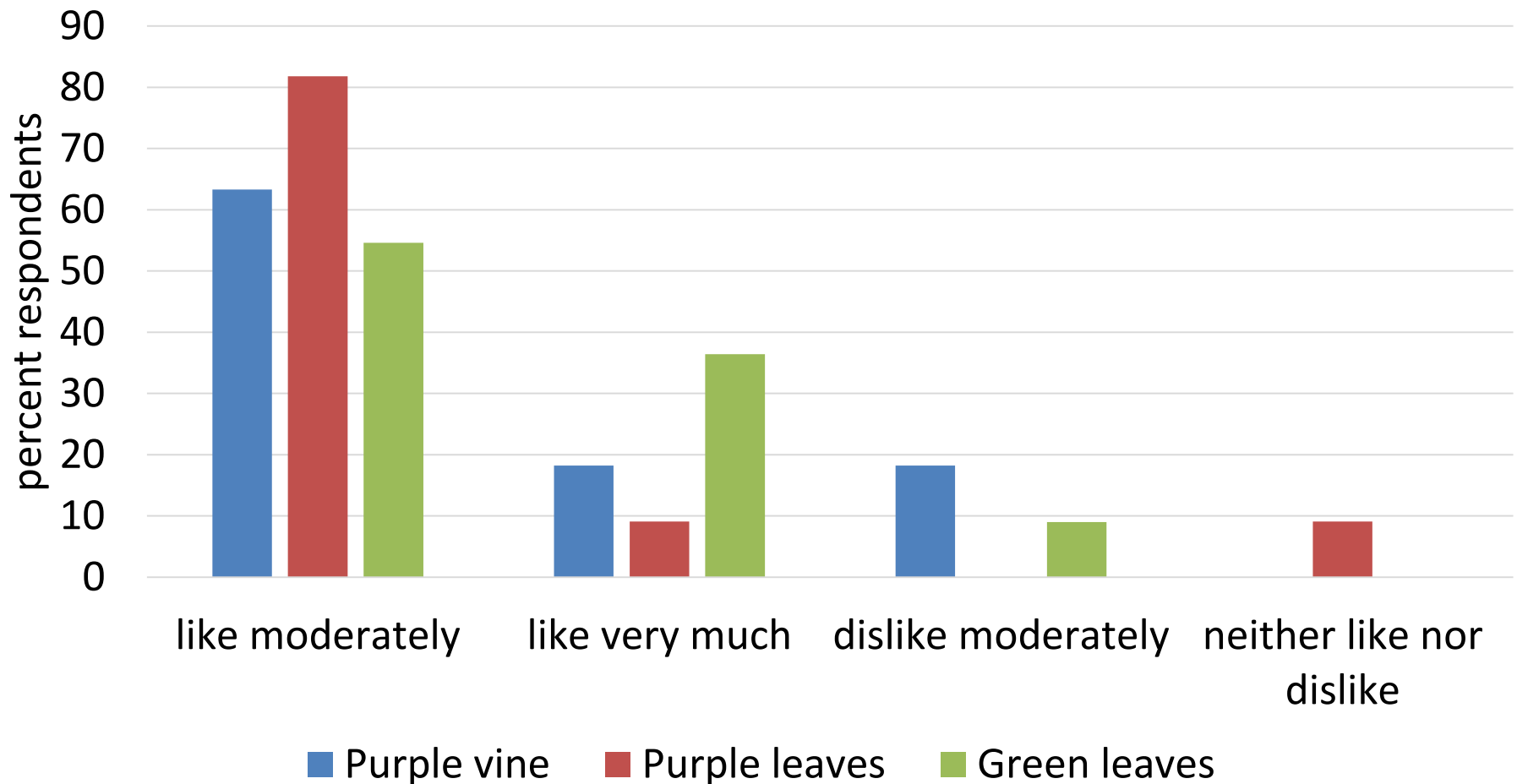
- Liked moderately





# Sensory-Texture

- Liked moderately

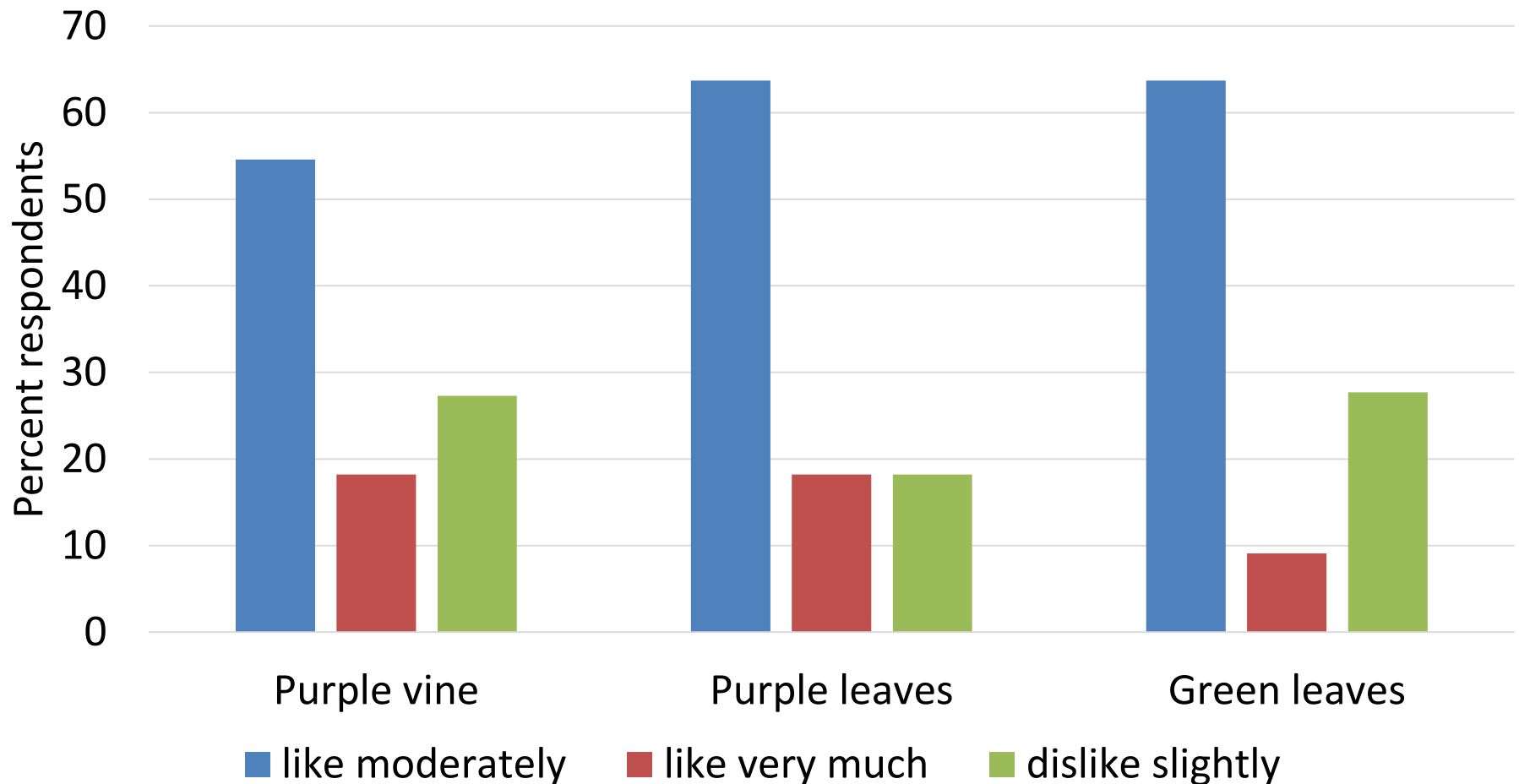






# Sensory-overall acceptability

- All acceptable-liked moderately





## Conclusions and way forward

- Sweetpotato leaves have high levels of vit. A&C and good amount of protein.
- Leaves acceptable as boiled vegetables.
- Normal boiling reduces vitamins and oxalates sign,
- *Oxalate reduction by fermentation to be established.*
- *Mineral evaluation and lactic acid fermentation ongoing.*



# Acknowledgements

- UON

**AAUN** AUSTRALIA AFRICA  
UNIVERSITIES NETWORK

- SASHA

**THANK YOU**