

**INTRODUCTION**

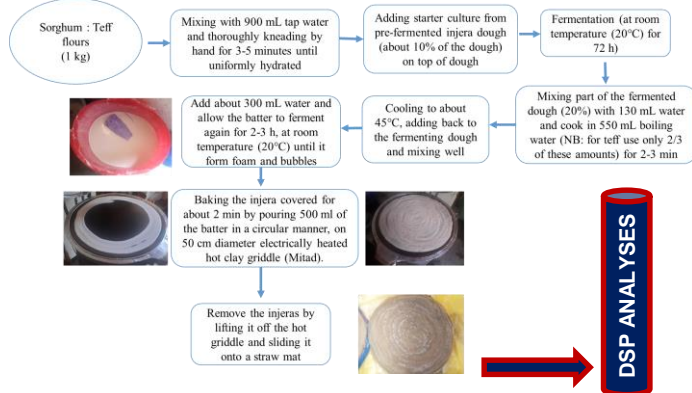
- ❖ The biggest challenge as a result of climate change in Africa is food security (Brown et al., 2007). Drought will be one of the major impacts of climate change and alternative cereals like sorghums that are well adapted to harsh climatic conditions will be appropriate (Belton and Taylor, 2004, Hattori et al., 2005).
- ❖ Preparing injera from sorghum also has considerable economic benefits over *teff*, as sorghum commands a much lower price and preparation of *teff* is very much time consuming and expensive (Tefera, 2012).
- ❖ Sorghum injera is inferior in quality as a result of staling and poor keeping quality. Formulations (sorghum-teff flour mix) that do not affect consumer choices/preferences of injera are required to take advantage of the economic benefit. This study is then aimed to refine sorghum-teff injera formulation and technology with trained panelists.



Figure 1. Formulated Sorghum-Teff Injera and their controls (A - 30% Merera, B- 30% Waxy, C- 30% Melkam, D- red teff, E- 50% waxy, F- white teff injeras)

**EXPERIMENTAL: INJERA**

**a) Injera protocol developed – based on Mezgebe et al. (2020&2023)**



- ❑ Sorghum Type: Melkam, Merera, Waxy, Local sorghum
- ❑ Blending: 30, 50, 65% (T1: high level, T2: low level)

**b) Sensory Panel trained and used to screen injera quality**



- ❖ The trained panelists generated 25 attributes and terms to evaluate sorghum-teff injera formulations (Figure 1).

**RESULTS & DISCUSSION - DISCRIPITIVE TEST (1)**

- ❖ Waxy sorghum at 50% produced injera with similar property compared to 100% teff injera.
- ❖ Regular sorghum added at 30% to teff was essentially similar in injera making quality to 100% Teff injera (Figure 1 & 2) - considering that teff flour quality is maintained.
- ❖ Sensory panel reported that 30% sorghum and 70% teff can make injera of similar texture and mouthfeel properties to teff injera.

**CONCLUSION**

Sorghum-Teff injera formulated at 30:70 produced same injera quality as of 100% teff injera. Waxy sorghum added more than regular sorghum (50%) resulted injera of better quality. Whenever, more sorghum mix is required waxy-sorghum could be an option. These formulations are promising for commercially viable productions, industrial applications and marketing of injera products (including the mix flour and injeras).

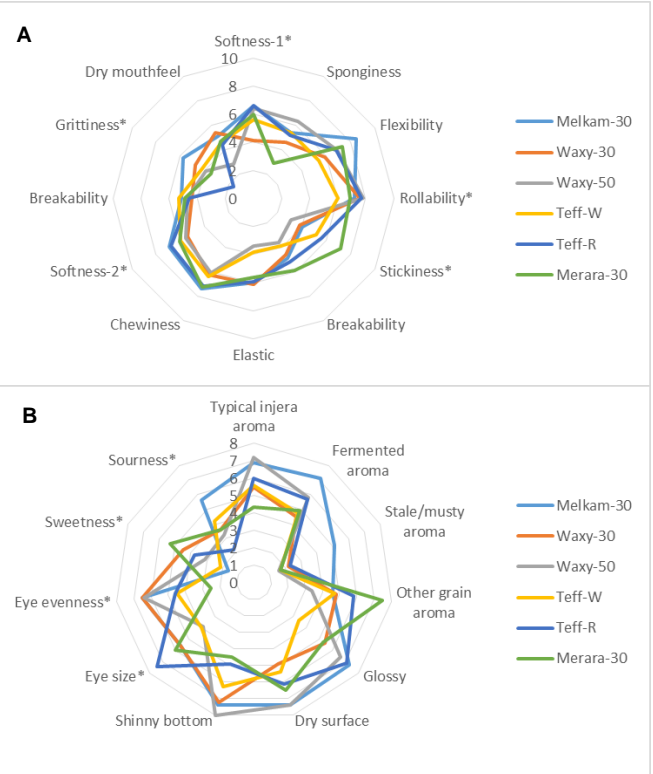


Figure 2. Spider Plot – Analysis of sensory properties of sorghum-teff injera formulations: (A) Texture related attributes, (B) Aroma, appearance & taste properties

**DISCRIMNATIVE TEST (2)**

**TRIANGLE TEST:**

- ❑ A discrimination test designed primarily to determine whether a perceptible sensory difference exists or not between the two type of injeras (Sorghum-teff vs 100% teff).
- ❑ Regardless of the type, sorghum at 30% was reported the same as teff injera.
- ❑ Panelist were only able to differentiate the teff injera from the formulation when sorghum is added at 50% & above.
- ❑ The triangle test was significant and also shows that injera of 50% waxy sorghum was not different from 100% teff injera.

**ACKNOWLEDGEMENTS**

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