WETMILLING TRIAL KAHUHIA FCS, MURANG'A

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Introduction

- Washed arabica coffee in Kenya is recognised as a unique specialty product
- Traditional high grown
  - Pulped with disc pulpers,
  - fermented,
  - washed,
  - channel graded
  - & sundried

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- But there are issues with this process in the small holder sector

- 1. Reduced availability of clean water
- 2. Ageing machinery and infrastructure; circa 1970
- 3. Variable control of process through lack of skills & experience
- 4. High peak intakes and congestion
- 5. High cost of wet processing

The opportunity

- The widespread use of mechanical demucilagers in other origins, both in Central America and East Africa offers:-
- Reduced water use
- Improved process control – continuous flow
- Reduced cost financially,
  - environmentally
  - and socially

The question – what effect on quality?

- USAID funded SPREAD trial in Rwanda compared “Traditional Wet Process” with Penagos and Pinhalense “Eco-pulpers”
- Blind cupping by a panel of international cuppers found Penagos Eco Logic 500M system consistently yielded best results for all characteristics – Pinhalense Eco-ISV almost the same
- Soaking beans before drying did not add any benefit
- Both eco pulpers provided considerable water and cost savings over traditional system

Would the results be the same in Kenya?

Given the unique quality characteristics which were believed to be associated with the traditional wet process and for which buyers were prepared to pay significant premium prices

The Trial

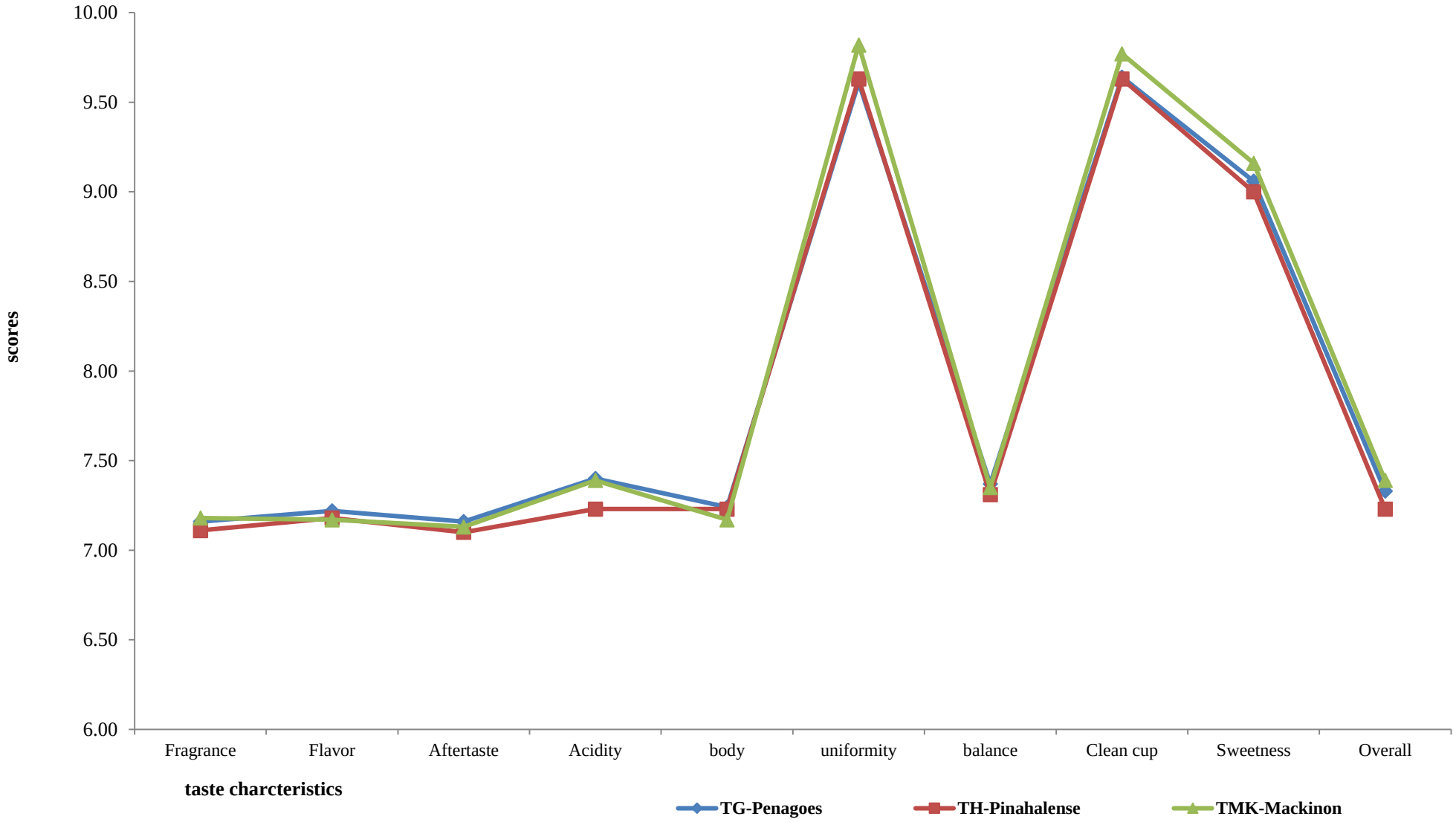
- To determine the effect of pulping and mucilage removal system
- Soaking time

- On cup quality:
  - Body
  - Acidity
  - Sweetness
  - Overall

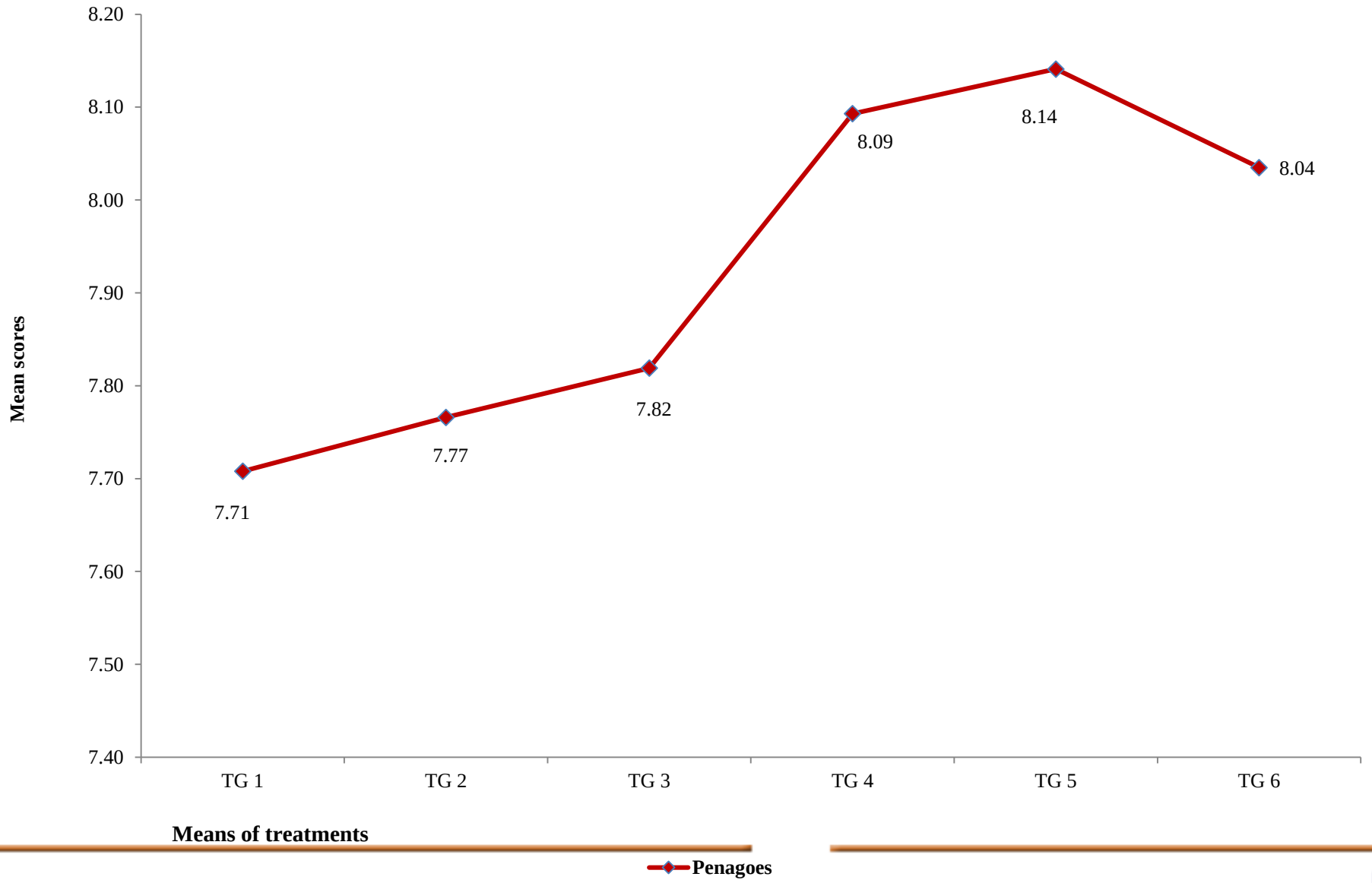
The treatments

- Control – McKinnon disc pulpers, full fermentation and wash
- Eco-pulpers Penagos and Pinhalense fitted with mechanical demucialgers
- Post demucilage soaking – from Zero to 48 hrs
- All treatments replicated – different dates thru season
- All coffee sundried
- All samples coded and blind cupped

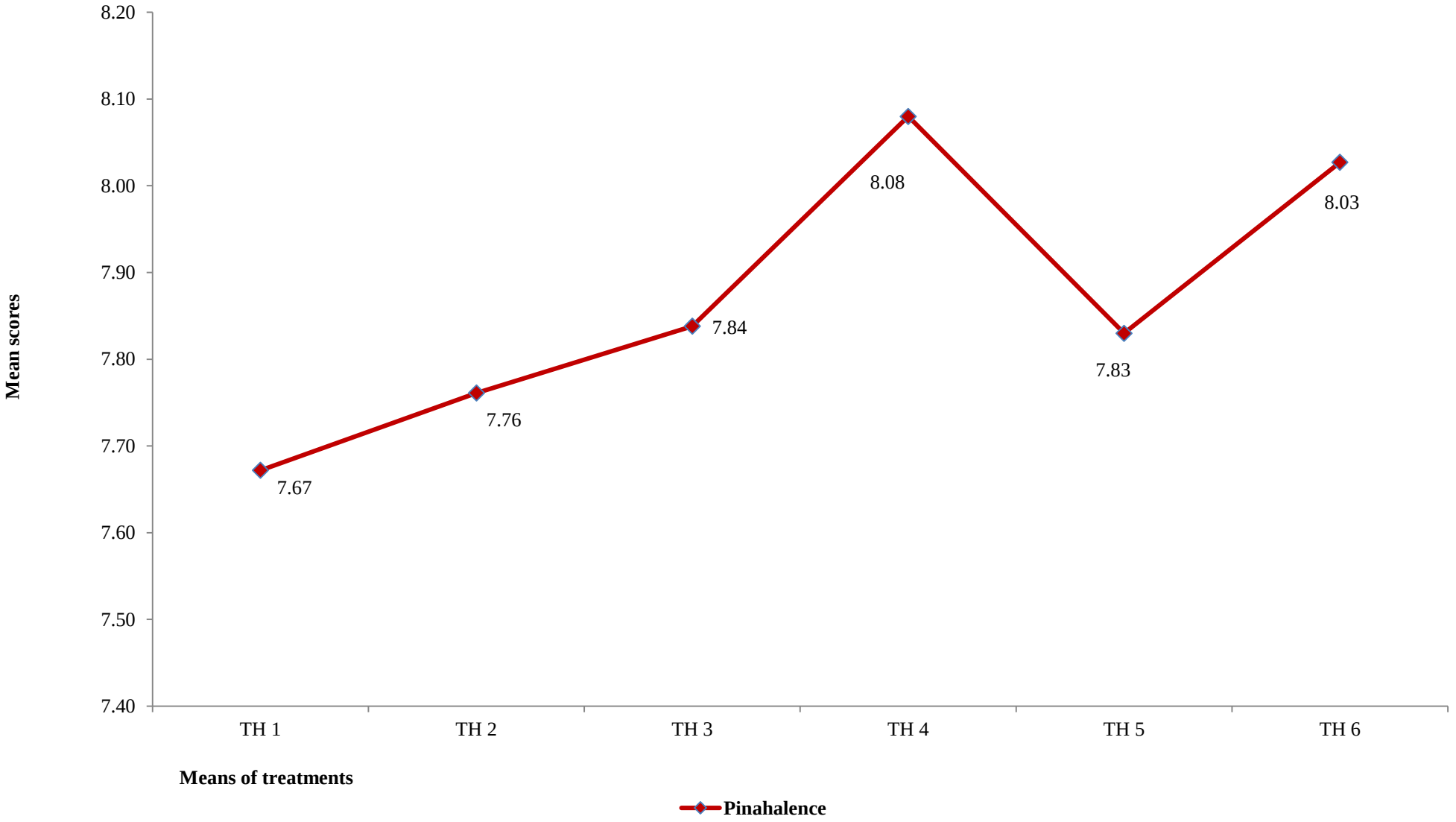
Results: Effect of treatment means on scoring



The results: Effect of soaking Penagos



Results: Effect of soaking - Pinhalense



Water consumption

- The Eco-pulpers used on average 3.1 l/kg of cherry for pulping and demucilaging. This did not include transport of parchment to tables or of pulp after pulping.
- The McKinnon pulper used 20 l/kg of cherry, which is within the accepted industry average (17 to 20 l/kg of cherry).

Cupped @ 15 months - Penagos

No Soak

- Slightly faded flavor
- Good complexity
- Good complexity
- Grassy/ harsh/ astringent

Soak

- Good complexity
- Good flavor, slightly winey
- Clean
- Good complexity

Cupped @ 15 months - Pinhalense

No Soak	Soak
• Good flavor, complexity	• Clean
• Winey complexity	• Good complexity
• Rough finish	• Clean
• Straight forward	• Slight complexity
•	

Conclusion and Recommendations

- **Conclusions**
- Profile of the cup constant over treatments – determined by Terroir and not distorted by process in this trial
- Highest scores obtained with demucilaged coffee – soaked for 18 to 24 hrs
- Considerable water savings made – but not as much as expected
- Overall quality set by season – droughted crop

- **Recommendation**
- Soak wet parchment for 18 hrs before drying to maximise quality scores
- Use of Eco-pulpers will not compromise quality but will address issues of water consumption and consistency of process
- Repeat trial in good season with top quality cherry
- Compare soak vs. no soak with traditional process to test effect on “fading” of unsoaked coffee