



# Optimisation of micropropagation protocol for mass multiplication of hybrid coffee (*Coffea arabica* L.) cultivars of Ethiopia



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## Introduction

- Coffee is an important global commodity and the most consumed beverage. Ethiopia is known for its unique arabica coffee flavour. Coffee yield does not look improved despite the high-yielding hybrid varieties. The aim of coffee TC is to optimise protocols for mass propagation of elite varieties and provide producers with an adequate supply of planting materials.

## Our findings

- Protocols for somatic embryogenesis in hybrid coffee (*C. arabica* L.) were optimized by modifying the method described in Berthouly & Etienne 1999.
- Crop yield, cup quality, and biochemical analysis were done to check the true-to-typness of cloned, and showed that there were no significant differences.

Table 1. Arabica coffee hybrid varieties embryogenesis potential

Hybrid coffee varieties	Embryo number	Plant Conversion rate	Replication
Melko CH2	401.64 <sup>a</sup>	77%	18
Gawe	367.38 <sup>a</sup>	62%	20
Eiar50 CH	316.15 <sup>ab</sup>	64%	22
Tepi HC5	252.31 <sup>b</sup>	65%	18
<b>Mean</b>	<b>329.50</b>	<b>67%</b>	
<b>LSD (5%)</b>	<b>72.24</b>		
<b>CV</b>	<b>9.42</b>		

## Methodology



Figure 1. Somatic embryogenesis process in coffee

- So far, over 150,000 coffee hybrid seedlings (cv. Ababuna & Melko CH2) were multiplied and given to farmers.



Figure 2. Multiplication of coffee hybrids

## Conclusion and future remark

- Large-scale hybrid coffee seedlings (F1 clones) can be multiplied via TC methods.

- Improving local capacities by engaging commercial producers should be a priority to exploit the potential of hybrid coffee.