



Improving smallholder farmer incomes through strategic market development in mango supply chains in southern Vietnam

**Mid Term Review
July 2021**

Activity **2.1**
Title **Hot Water Treatment Study – Southern Vietnam**

Team
Van Phong Nguyen, SOFRI
Peter Johnson, Griffith University

Implementing Agency



SIAEP



Funding Agency



Australian Government
Australian Centre for
International Agricultural Research



- ▶ Disease breakdown in mango is the biggest limitation for the development of long-distance markets either domestic or export.
- ▶ Previous studies undertaken, reported HWT regimes of 55C for 5 min was suitable for the Cat Hoa Loc variety, and 53C for 7 min for the Cat Chu optimizes disease control whilst minimizing peel damage.
- ▶ However, observations are that these regimes are causing significant heat related damage.
- ▶ It has been hypothesized that the recent adoption of protective bagging may be influencing skin sensitivity
- ▶ Other plausible causes are excessive use of nitrogen fertilizers, calcium deficiency, fruit harvesting too soon after a significant rain event or fruit immaturity.

Activity 2.3: Hot Water Treatment Study – Southern Vietnam

Focus

- ▶ Improving hot water treatment to maximize disease whilst minimizing negative impacts on skin quality.

Research questions

- ▶ What on-farm, post-harvest and marketing innovations are likely to generate the most significant impacts to reduce losses, increase productivity and quality outputs that will improve returns directly related to smallholder incomes?
- ▶ What innovations have the most cost-effective and positive impacts on productivity, losses, quality and harvest timing, leading to improved price and farmer income?

Expected outputs – current study

- ▶ Understanding the effect of the addition on fungicide to enhance HWT efficacy
- ▶ Understanding the influence of bagging on skin sensitivity to heat treatments
- ▶ Understand if pre-conditioning can have a role in reducing heat damage
- ▶ Develop a better temperature regime that will minimize damage
- ▶ Understand role does cool chain management play in managing disease within Hanoi/Hong Kong chains
- ▶ Have a HWT for disease control model that can be implemented into commercial operations.

Study expectations:

- ▶ Lessons from Australian study can be applied to trial procedures
- ▶ Capacity building within the postharvest research team.



Pathway to completion

- ▶ Undertake trial program Aug/Sep
- ▶ Draft Report Mid November
- ▶ Final report 8th Dec
- ▶ Industry & research papers.

Future Opportunities

- ▶ Results from trials will be able to be incorporated into local packhouses for developing chains to long distance markets Hanoi/HK/China and other export opportunities.
- ▶ The experimental work is directly applicable to partner countries and initially trialing is essential for the development of long-distance export markets.