



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

**Mid Term Review
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Activity 2.2 PBZ Alternative & Temperature Impact Study

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Implementing Agency



Funding Agency



Australian Government
Australian Centre for
International Agricultural Research

Aim & objective

Activity 2.2

- ▶ PBZ Alternative & Temperature Impact Study

Activity focus

- ▶ Evaluate alternative product to PBZ that could be used to maintain high yields in Cat Hoa Loc should PBZ no longer be available
- ▶ Determine whether chemical inputs could be reduced using alternative gibberellin synthesis inhibitors
- ▶ Build researcher & farmer capacity to evaluate orchard responses to chemical treatments that manipulate flowering and fruit production

Research questions

- ▶ What on-farm 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 incomes?

Background

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- ▶ PBZ is an integral part of mango production to aid improved flowering & yield
 - ▶ Current application rates are too high which is affecting fruit development & thereby reducing root growth, & modifying nutrient uptake that impacts fruit quality
 - ▶ There is also the potential for contamination of ground water & soil.

Achievements

- ▶ Initial trials showed comparable yields achieved between PPZ, UCZ & ProCal
- ▶ Cropping response could be improved by increasing time between Ga inhibitors & floral induction
- ▶ Successful trials will offer growers alternatives to PPZ, addressing some of its underlining issues of long soil residual life, inhibition of root growth & nutrient uptake.
- ▶ Foliar applications will significantly reduce chemical quantities whilst delivering a more precise tree dose.



Lessons learnt

What worked well:

- ▶ Foliar applications produced flowerings on par with soil application.



What could be changed or improved next time:

- ▶ Trial design needs more rigor. Needs further studies.
- ▶ Allowance of more time between treatment application and induction to allow build up of tree reserves.
- ▶ More work particularly in basic economic training with farmers I required, to give them the skill to be able to self evaluate the benefits of changes to flowering programs.



Pathway to completion

- ▶ To December 2021 – Repeat trial planned
- ▶ Working paper to be concluded by end of 2021
- ▶ Presentation of results at the Annual Project Workshop, November 2021

Future Opportunities

- ▶ Findings from this trial would benefit from larger scale study to inform Vietnam mango production, partner countries and Australian mango industries.
- ▶ Significant benefits can be achieved from foliar applications refining this technique will lead to reduced chemical input and more precision in applications.