

Australian hot water treatment study provides advancements for global mango trade

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Researchers have discovered how to use hot water treatment to meet



market entry protocols for fruit fly disinfestation in Australian mangoes.

Heat treatment is the internationally accepted protocol for market access, currently applied to mangoes through vapor heat technology.

Hot water treatment is an inexpensive, more efficient alternative, but previous studies found that the rapid transfer of heat typically led to scalding and other heat related injuries on the skin of the mango.

Adjunct industry fellow, and member of the Griffith Asia Institute (GAI), Peter Johnson developed the <u>research design</u> in collaboration with researchers from the Department of Primary Industries and Regional Development (DPIRD).

Two years of trials were undertaken at DPIRD's Frank Wise Agricultural Research Institute in Kununurra, Western Australia.

The study, conducted on the commonly exported variety R2E2 and new variety NMBP-4069, found that the fruit responded well to hot water treatment when preconditioned to ambient shed temperatures.

"The trials examined two preconditioning treatments of 6 and 24 hours, followed by hot water treatment at the protocol standards," Johnson said.

"NMBP-4069 proved to be the more versatile variety, but R2E2 also performed well under certain conditions.

"The high ambient temperatures in Kununurra during fruit development are likely to be a contributing factor."

The study was part of a larger project, led by GAI's agribusiness expert Associate Professor Robin E Roberts, which aimed to improve smallholder farmer incomes by increasing the competitiveness of



selected mango value chains in Southern Vietnam.

"The outcomes of this study could generate far reaching benefits, not only to the Australian mango industry but to our neighboring developing countries seeking to enhance their local export trade opportunities," Associate Professor Roberts said.

"This comparatively simple <u>treatment</u> makes disinfestation accessible to mango growers in countries that cannot afford the vapor <u>heat treatment</u> method, which could help improve fruit quality and profitability.

"It will also assist <u>mango</u> growers to satisfy increasingly discerning phytosanitary requirements, enabling exporters to target premium markets, like Korea, Japan and the United States of America."

The research team are preparing to publish the experimental method, key results, and findings in a <u>scientific journal</u> to validate the study.

Provided by Griffith University

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