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FINAL REPORT FOR THE REVIEW OF IMPORT CONDITIONS FOR FRESH GINGER FROM FIJI

This Biosecurity Advice notifies stakeholders of the release of the final report for the review of import conditions for fresh ginger from Fiji.

The commencement of a review of import conditions for fresh ginger from Fiji was announced in Biosecurity Advice 2014/14 on 17 November 2014. A draft report was issued for stakeholder comment on 22 June 2015 for a 30 day consultation period.

The review of import conditions for fresh ginger from Fiji

The review was undertaken to meet a commitment in the final import risk analysis for fresh ginger from Fiji, which was released in January 2013. Its terms of reference include evaluating the efficacy of measures applied to manage the biosecurity risks associated with fresh ginger from Fiji, and making recommendations on actions needed to confirm the quarantine status of the burrowing nematode, *Radopholus similis*, and the efficacy of any phytosanitary measures for managing it and pests of quarantine concern. The review was supported by an extensive literature review and analysis of the science relevant to the quarantine status of *Radopholus similis*.

Inspection outcomes of the five consignments of ginger imported in the first year of trade, including laboratory analysis of samples from these imports, were also assessed and presented in the report.

Outcomes of ginger imports in the first season

A total of five consignments of fresh ginger were exported from Fiji to Australia in late 2014 and early 2015. These were the first imports under the permits issued, which applied the measures set by the Import Risk Analysis for fresh ginger from Fiji. All consignments were accompanied by the appropriate phytosanitary certification by Fiji biosecurity authorities and were inspected by the department when they arrived in Australia. No live quarantine pests were detected during the department's inspections, and all five consignments were released from quarantine. Some non-quarantine pests were detected with no remedial action required, and a number of dead insects were also noted.

Yam scale (*Aspidiella hartii*) was detected on four consignments of imported ginger during the first season of trade and prompted a review of phytosanitary measures for this quarantine pest. The current requirement is for imported ginger to be free of yam scale

based on a standard 600 unit inspection. The finding of yam scale during import inspections indicated that this requirement has not been met. On-arrival inspections and independent testing confirmed that all yam scales detected were dead. This is an expected consequence of fumigation with methyl bromide and the department therefore recommends a mandatory methyl bromide fumigation treatment be introduced for yam scale.

Quarantine status of *Radopholus similis*

The department undertook a comprehensive review of *Radopholus similis* covering:

- the scientific literature
- the historic and current situation of *Radopholus similis* on ginger in both Fiji and Australia, and
- interceptions on imports of Fiji ginger into Australia over the first (2014–15) season

In undertaking the review the department consulted with technical experts nominated by the Australian ginger industry, Queensland Department of Agriculture and Fisheries (QDAF) and Fijian authorities. The department also visited ginger production areas in Queensland and Fiji, held discussions with technical experts during these visits and actively sought additional relevant information.

The scientific literature

The department and technical experts representing the Australian ginger industry, QDAF and Fiji agreed that the *Radopholus similis* pathogenicity experiments conducted in Fiji during 2009 and Australia during 2012 were not directly comparable and did not provide scientific proof of a significant difference between Fijian and Australian *Radopholus similis* isolates on ginger.

The review found no clear supporting scientific evidence in the wider biological literature for the existence of a strain of *Radopholus similis* in Fiji with significantly different pathogenicity on ginger compared to *Radopholus similis* already present in Australia. There was no consistent scientific evidence in the literature for biological factors influencing differences in pathogenicity and host preference in *Radopholus similis*.

The historic and current situation of *Radopholus similis* on ginger in both Fiji and Australia

In 2007, a survey of 22 farms across nine Fijian ginger growing regions recorded significant damage caused by *Radopholus similis* on some farms in the Veikoba district. *Radopholus similis* was also recorded in low numbers at Muanaweni.

However, there is currently no evidence that *Radopholus similis* is causing damage in ginger fields in Fiji. Surveys of soil and ginger conducted by the Fijian Ministry of Agriculture's Research Division across a range of ginger farms in seven localities between June and

September 2014, including fields that were infested with *Radopholus similis* in 2007, detected no *Radopholus similis* (although other nematode species were detected). Further sampling of volunteer ginger (regrowth from previous crop) and crowsfoot (a weedy host of *Radopholus similis*) in February 2015 also did not detect any *Radopholus similis*. There have been no reports of *Radopholus similis* being found since the publication of the draft review report in June 2015.

Fiji has indicated that ginger production practices have been modified to prevent and manage infestation with *Radopholus similis*. Ginger production in Fiji currently involves crop rotation with plants that are not hosts for *Radopholus similis* with some growers also including an additional six month fallow period. Growers are encouraged to plant in new areas not previously used for ginger production. Growers receive extensive training on seed treatment and preparation and equipment is provided on a loan scheme for hot water treatment of seed.

Conclusion

There is presently insufficient scientific evidence to support the claim that Fiji has a strain of *Radopholus similis* with significantly different pathogenicity on ginger compared to the *Radopholus similis* already present in Australia. However, the department will retain the current provisional quarantine pest status for *Radopholus similis* for an additional reasonable period of time, subject to a number of conditions. During this time period, the existing measures for *Radopholus similis*, recommended in the final IRA report, will remain in place, with the addition of methyl bromide fumigation for yam scale.

The department and technical experts representing the Australian ginger industry, QDAF and Fiji agree that the only way to scientifically prove such a difference would be to do an experiment comparing Fijian and Australian *Radopholus similis* isolates side-by-side in an appropriately controlled trial using a methodology agreed by all parties. Since the release of the draft report, QDAF has confirmed its intention to undertake such an experiment in Australia to determine if there are any differences in the economic impact on ginger yield and quality caused by *Radopholus similis* isolates from Fiji and Australia. Conduct of the experiment will be subject to the following conditions:

- the availability of relevant *Radopholus similis* isolates
- an agreed protocol for importation and appropriate quarantine containment
- agreement by AGIA, QDAF, Fiji and the department, on the experimental design and methodology
- reasonable timeframes.

Fijian authorities have advised that no *Radopholus similis* cultures are being held in Fiji. The department has formally requested assistance from Fiji to obtain *Radopholus similis*

specimens from ginger production areas. Fiji has agreed to assist and activities are currently underway to source the required specimens. It is understood that it may be difficult to source new specimens from the field considering its current reported low prevalence.

The department is prepared to review import conditions if additional relevant information becomes available.

The final report and information about the risk analysis process are available at <http://www.agriculture.gov.au/biosecurity/risk-analysis/reviews/final-plant>

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