



## SENATE SUBMISSION

Senate Rural and Regional Affairs and Transport  
References Committee

### Importation of fresh ginger from Fiji

The Australian Ginger Industry Association (AGIA) welcomes the opportunity to make a submission to the Senate Rural and Regional Affairs and Transport References Committee inquiry into the effect on Australian ginger growers of importing fresh ginger from Fiji.

The Provisional Final Import Risk Analysis (PFIRA) released by DAFF Biosecurity on 10 August 2012 proposes phytosanitary measures for fresh ginger imported from all commercial production areas of Fiji, subject to a range of quarantine conditions.

The AGIA believes that DAFF Biosecurity has significantly underestimated the risk posed by the introduction of various pest and disease organisms, and has not provided for adequate risk mitigation measures.

## Our concerns

- **Soil**

While Australia has a general requirement that all consignments be free of soil, the AGIA believes that DAFF Biosecurity has not adequately addressed the definition of the term 'free of soil'. The PFIRA (p. 83, Issue 1) states that soil as a contaminant is managed 'to a very low level but not zero'.

Dr Colin Grant stated in 'Official Committee Hansard, Senate, Rural and Regional Affairs and Transport Legislation Committee Estimates Monday, 21 May 2012' that 'A few grains of soil will not be a medium sufficient to maintain nematodes. You would have to have clumps of soil—fairly small clumps, admittedly'. However, data supplied in the AGIA's response to the Draft IRA (pp. 12–13 and Table A.1 on p. 66) show that even extremely small amounts of soil can harbour nematodes. Up to 17 nematodes were extracted from each of 10 samples of less than 1 gram of soil hidden in crevices on ginger rhizomes. AGIA's concern is that such a small amount in a crevice of a ginger rhizome may even not be detected. If it is detected, it may well be considered by quarantine officers as an 'insignificant amount'.

The AGIA requests that a firm definition of 'free of soil' includes a requirement that the amount of soil allowed is zero.

- **Planting material**

The PFIRA (p. 83, Issue 2) states that the 'AGIA and DAFF Queensland submissions have also suggested that growers will be importing bulk consignments for planting purposes. This would be a contravention of the conditions on the import permit, and liable to prosecution'.

This is incorrect. The AGIA did *not* suggest that growers would deliberately import planting material. However, it would be naive to believe that some consumers and growers would not buy legally imported ginger from a food market or wholesaler, and use it as planting material. Growers already rely on the domestic market for planting material when other sources are scarce. In fact, current ginger growers are regularly approached by wholesalers to supply ginger planting material to new ginger growers and other farmers looking to diversify their operations. If cheap, legally imported ginger from Fiji is available on the market, it is inevitable that some will be used, either intentionally or unintentionally, as planting material.

It would also be short-sighted to ignore the possibility of future expansion of the ginger industry to other regions; such growth would require use of additional planting material, which may be sourced from a consumer market.

- **Proposed risk mitigation of *Radopholus similis***

The PFIRA (p. 56) proposes that the risk of *Radopholus similis* (burrowing nematode) in ginger exported to Australia be managed by either:

- a systems approach, such as, but not limited to:
  - the use of clean seed certified as nematode-free, or seed dipped in hot water at 51 °C for ten minutes, and either
  - a crop rotation program using non-crop hosts and fallow period, or
  - production in a recognised area of low pest prevalence

or

- methyl bromide fumigation or other suitable treatment of rhizomes, either in Fiji or on arrival in Australia.

Because *R. similis* was not recognised as a quarantine pest in the Draft IRA, this is the first time that proposed risk mitigation measures for *R. similis* have been made public. A deficiency in the IRA process is that the AGIA has not been given any opportunity to comment on these measures. Therefore, the AGIA would like to take the opportunity now to address each of the measures proposed.

DAFF Biosecurity proposes that clean seed be produced in Fiji by either certification or hot-water treatment. If certification is used, the AGIA is concerned about who controls this certification and how it will be achieved.

Hot-water treatment, on the other hand, does not reliably eliminate nematodes from planting material, and DAFF Biosecurity has not provided any scientific evidence of the effect on *R. similis* of dipping rhizomes in hot water at 51 °C for ten minutes. It is notoriously difficult to maintain the correct temperature in hot-water treatment tanks for the required time. Even if that is achieved, it is unlikely to kill all nematodes and can be relied on only to reduce the numbers of nematodes. As mentioned on p. 7 of the AGIA's response to the Draft IRA, the Draft IRA does not describe the apparatus used in Fiji for hot-water treatment and makes no assessment of how well those farmers who do treat rhizomes are able to do this.

Even if it is possible to reliably produce clean seed, this is worthless unless it is planted into soil that is completely free of *R. similis*. The only way to ensure this is by using a program of area freedom. Crop rotation with non-crop hosts and fallow will *not* eliminate *R. similis* from the soil. The alternative proposed by DAFF Biosecurity is to plant ginger seed into soil with 'low pest prevalence'. However, there is no mention of what 'low pest prevalence' means or who would determine the level of prevalence. Use of either of these measures would only ensure that any *R. similis* present in the soil continue to multiply on ginger seed and be contained within rhizomes exported to Australia.

Of the risk mitigation measures against *R. similis* as proposed by DAFF Biosecurity, the AGIA would consider only methyl bromide fumigation as potentially effective. However, there is little information available on the effectiveness of fumigation on organisms living inside plant tissue. As *R. similis* is an endoparasitic nematode, reproducing inside the rhizome, we believe that further work is needed to determine the effect of methyl bromide fumigation on nematodes contained within rhizomes.

*R. similis* is not found in Australian ginger, yet area freedom is the requirement for export of Australian ginger to Japan. Therefore, importation of ginger from Fiji, where *R. similis* is found extensively, should require measures no less stringent than area freedom and/or methyl bromide fumigation.

The AGIA proposes that the minimum suitable risk mitigation strategy for *R. similis* on ginger imported from Fiji includes area freedom *and* fumigation with methyl bromide.

- **Other pathogens**

The AGIA is also concerned about the risk of importing Fijian strains of the fungal pathogens *Pythium graminicola*, *P. vexans* and *Fusarium oxysporum* f.sp. *zingiberi* on ginger rhizomes and that these may differ from Australian strains in their pathogenicity and host range. We believe that evidence outlined in our response to the Draft IRA and some preliminary experimental data (pp. 30–3, 76) cast sufficient doubt and support our view that further research is required to compare Australian and Fijian isolates of these pathogens.

The DAFF Biosecurity position (PFIRA pp. 88–90) is that these species are present in Australia and, therefore, without ‘published peer reviewed literature’, it will not accept that there is evidence of differences between Australian and Fijian isolates of these fungi. The AGIA finds it difficult to accept that an argument of lack of information implies no risk. We believe therefore that, before the IRA is finalised, there should be research to compare the pathogenicity and host ranges of Australian and Fijian strains of these fungi.

Of particular concern is the fact that, if not for research done by the Australian ginger industry, DAFF Biosecurity would not have known of the threat caused by *R. similis* (it was not discussed as a quarantine pest in the Draft IRA). The AGIA is concerned that other Fijian pests may pose significant threats to the Australian ginger industry and considers that all major pests should be fully investigated before the IRA is finalised.

- **Risk estimation matrix**

The AGIA also questions the validity of the risk estimation matrix as used by DAFF Biosecurity. Given that several of the pests that may be imported with fresh ginger from Fiji have the potential to wipe out Australia’s ginger industry, risks presented by those pests should not be assessed as any lower than moderate. We note that, in relation to the importation of pineapples from Malaysia, the Rural and Regional Affairs and Transport

References Committee has decided to seek independent advice in relation to the risk estimation matrix. The AGIA welcomes this decision and would ask that any such independent advice be applied to the IRA for fresh ginger from Fiji.

The other significant concern is that the assessment of risk by DAFF Biosecurity at each point in the importation process is based on extremely limited information. There is no doubt that Fijian isolates of *R. similis*, for example, cause damage very rapidly, killing plants and destroying rhizomes. However, there is little reliable data available to assess factors involved in import risk, including:

- the risk of importing the nematode in rhizomes or in soil attached to rhizomes
- the effectiveness of methyl bromide fumigation in killing *R. similis* inside rhizomes.

The AGIA maintains that there is, as yet, not enough information available to use the risk estimation matrix to assess the risk of importation of pests.

- **DAFF Biosecurity trip report**

The Draft IRA (p. 15) states that information gained on a visit to Fiji in September 2007 by DAFF Biosecurity officers ‘forms the basis for estimating unrestricted risk in this Import Risk Analysis’. On 4 May 2012, the AGIA requested a copy of the report of this visit to assist in its assessment of the risks involved. This request was denied but, after a request in the Senate estimates meeting on 21 May 2012, DAFF Biosecurity supplied the document on 25 May 2012 (just 3 weeks before the deadline for submission of responses to the Draft IRA). This gave the AGIA very limited time to get expert advice on the contents of the trip report. The AGIA believes that all such relevant information should be made available at the time of release of the Draft IRA.

Unfortunately, the trip report was very limited in its scope, as outlined on pp. 9–11 of the AGIA’s response to the Draft IRA. Specifically, it did not provide sufficient information on production practices in the Fijian ginger industry for the AGIA to be able assess the risks involved. Even more concerning was the fact that it stated that several issues relevant to this IRA needed to be investigated further. Specifically, these issues were:

- to determine whether bacterial wilt, an important disease of ginger caused by *Ralstonia solanacearum*, is present in Fiji and which biotype was present
- to determine whether the extensive rotting of ginger rhizomes was due to pest and disease.

There is no information in the PRIRA to suggest that these questions have been answered. In the PFIRA, all mention of the trip report has been removed, which is of particular concern. The PFIRA (p. 84, Issue 5) states that further information is not needed on ginger production in Fiji because there are publicly available reports, such as MPI (2011) and Smith *et al.* (2012). However, these articles were not referred to in the Draft IRA so were presumably not

used to estimate unrestricted risk. This now suggests that, rather than the trip report being 'the basis for estimating unrestricted risk in this Import Risk Analysis', DAFF Biosecurity is not relying on any information on Fijian production practices for estimating the risks.

- **Stop the clock**

In 2010, Biosecurity Australia invoked the 'stop the clock' provisions for the import risk analysis for fresh apples from USA because 'it has been determined that additional information is essential to complete the IRA and that a proposer or another person can provide the information'. In the *Import Risk Analysis Handbook 2011*, a further opportunity to stop the clock is under circumstances where 'it is essential to undertake research, or to seek substantial expert advice, to complete an IRA'.

In the current situation, AGIA would welcome a similar delay on the importation of Fijian ginger until research can produce enough current scientific evidence to allow a better informed IRA with regard to those issues identified in the DAFF Biosecurity trip report and in relation to the risk estimation matrix..

- **Further research**

The AGIA sees that, before the IRA is finalised, further research is also needed to compare the pathogenicity and host ranges of Australian and Fijian isolates of *Pythium graminicola*, *P. vexans* and *Fusarium oxysporum* f.sp. *zingiberi*, and to determine whether the bacterial wilt pathogen is present in Fiji. It is important that further work is required on the effectiveness of methyl bromide fumigation on *R. similis* inside rhizomes.

As a relatively small group, the ginger industry is not in a position to fund such research. There is clearly a need for more scientific information in order to complete the IRA, and this can be achieved only with the financial support of the Australian or Fijian Government.

The AGIA is particularly concerned about the consequences if the research is not funded or conducted.