POTATOES
SOUTH AUSTRALIA
the voice of the potato industry value chain

Submission to

The Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the proposed importation of potatoes from New Zealand

09 October 2012

Potatoes South Australia Inc ABN 45 568 994 361
Elder House Level 2 27 Currie Street Adelaide South Australia 5000
GPO Box 1664 Adelaide South Australia 5001
www.potatoessa.com.au

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Executive Summary

The Draft report for the review of import conditions assesses a proposal from the Government of New Zealand (Ministry for Primary Industries) to permit market access to Australia for fresh potatoes for processing. The review is a process that reassesses the risk management measures and import conditions currently recognised for an import pathway.

The Department of Agriculture, Fisheries and Forestry (DAFF) Biosecurity proposes that the importation of fresh potatoes from New Zealand into Australia for processing be permitted subject to quarantine conditions. The import of potatoes for human consumption and for processing is currently prohibited entry to Australia from all countries. Cessation of trade with New Zealand occurred in 1988 when it was unable to meet the quarantine requirements for Potato Cyst Nematode (PCN). Australia is no longer PCN-free and New Zealand is currently requesting for trade to be resumed. However in 2008, the disease complex known as 'Zebra Chip' was reported in New Zealand. Australia does not have the disease.

Potatoes South Australia Incorporated has consulted directly with key scientists, research bodies, industry associations and the national peak industry body, AUSVEG, in its response to the Draft report. The response was strongly endorsed by its stakeholders. They want to protect their industry, Australian horticulture, and Australian biosecurity generally from the potential catastrophic yield loss of up to 50% ($0.25b) due to Zebra Chip which is caused by the bacterium, *Candidatus* Liberibacter solanacearum (Lso) and transmitted by the vector, the Tomato Potato Psyllid (TPP), (*Bactericera cockerelli*). Lso and TPP was an accidental incursion to New Zealand in 2006, and by 2009 it had spread across the country. Estimated loss due to the disease was $120m in 2011.

Prior to preparing this submission, the Board of Potatoes South Australia Incorporated met with senior staff from DAFF Biosecurity. This meeting allowed engagement, and disclosure of the WTO Sanitary and Phyto-Sanitary Agreement, the risk assessment process, the import permit application process, quarantine procedures and the overall approach by DAFF to biosecurity risk. It provided the Board with the capability to make a more informed decision on behalf of the South Australian potato industry value chain. Overall, the communication and extension of the Draft report to most stakeholders by DAFF Biosecurity has been very poor at best.

South Australia produces 80% of the nation's fresh washed potatoes and is the nation's largest potato producer with farm gate production worth $206m. Consequently, our industry has the most to lose if the importation of potatoes from New Zealand does not remain suspended.

Using the Draft report as the basis for this submission, the main stakeholder concerns are as follows:

- The biosecurity risk management plan lacks definition of terminology and qualifying description;
- There is little known about the psyllid's life cycle and the associated pathways for Zebra Chip disease complex;
- There is insufficient evidence to appropriately address the risk posed, current absence of evidence does not mean it is not there;
- There is no cure for the disease complex;
- The are no immune potato varieties;
- The Pest Risk Analysis (PRA) is out of date (2009);

- The considerable international research done since 2009 has not been incorporated and the references included in the Draft report are predominantly from government sources;
- Consideration is given to Potato Cyst Nematode (PCN), Zebra Chip and Potato Black Wart only, despite the many other exotic pests and diseases in New Zealand;
- The suggested control measures demonstrate little understanding of the process of packing and shipping, particularly with respect to container transport;
- The stringent stepped quarantine process cannot circumvent human error
- It is not known whether Australian native species of psyllids can carry the bacterium, *Candidatus* Liberibacter solanacearum; and
- Scientific research over time is required for the development of a robust management strategy.

Potatoes South Australia Incorporated urges DAFF Biosecurity to continue this suspension of trade. Given the economic devastation caused by Zebra Chip disease complex in USA and New Zealand at both a yield and management level, it is nonsensical to subject the industry to such a potentially severe risk. Many companies will not survive. Despite the assuredness of quarantine rigor and DAFF's commitment to maintaining Australia's biosecurity, the industry is appealing for the Australian Federal Government to reject the market access request from the New Zealand Ministry for Primary Industries for the importation of fresh potatoes for processing.

Introduction

Potatoes South Australia Incorporated is the peak industry body representing the whole value chain for the potato industry. It is the voice for seed producers, growers, fresh market, packers, processors, marketers, exporters, wholesalers, retailers and consumers. Established in 2012 after wide industry consultation, Potatoes South Australia represents the state's and nation's largest horticultural sector.

Potatoes South Australia is supported by a Board of seven covering the seed, processing and fresh markets and all geographic locations in South Australia.

The Board members are:

- Nick Psevdos (Chair), SA Potato Co
- Gary O'Neill (Vice Chair),The Mitolo Group
- Basil Mondello, Mondello Farms
- Andrew Widdison, Chair South East Potato Growers Association (processing)
- James Wandel, Kangaroo Island seed grower
- Mark Pye, Zerella Holdings/Parilla Premium Potatoes
- Richard Haynes, Elders

Objectives

Potatoes South Australia has five main objectives:

1. It will manage issues on behalf of the industry. It will advocate for stakeholders and lobby at regional, state and federal levels as appropriate, and provide advice to government. It will represent its members with respect to legislative change;

2. It will identify and support relevant research, development and extension needs. There will be collaboration with research bodies, identification of funding opportunities and the formation of strong affiliations with like-minded organisations in Australia and internationally;

3. It will reposition the potato and offer it as a more sophisticated healthy food to the increasingly discerning consumer. It will increase demand, particularly in the fresh market by supporting consumer and other stakeholder education and promotion, and by dispelling current negative perception;

4. It will represent all stakeholders along the value chain. It will collaborate and affiliate with relevant regional, state and federal industry organisations and provide access to information; and

5. It will improve industry competitiveness and sustainability.

Backgound to the industry

Potatoes represent the fourth largest food crop globally. By 2050 the global population will have increased by two billion people and potatoes will play a significant role in addressing food shortages and food security issues. China will require a 50% increase in food production or food supply which will create enormous export opportunity for Australian producers.

National Snapshot

- Annual production is worth $614 million
- 1.2m tonnes produced annually
- 36,400 hectares under cultivation
- 20% of all vegetable production
- In top two highest commodity groups sold in value and volume
- 55% of households purchase potatoes each week (8% behind the leader, the carrot)
- Processing potatoes account for 56% of the value chain
- Fresh potatoes represent 36% of the value chain
- Seed potato production represents 8% of the value chain

South Australian Snapshot

- Potatoes represent the largest horticulture contribution to gross food revenue ($440 million)
- **Nation's largest potato producer with farmgate production worth $206 million**
- Production in excess of 385,000 tonnes annually
- Processing sector represents 100,000 tonnes
- **Production of 80% of the nation's fresh washed potatoes**
- Significant contributor to the processed market
- Employs more than 2000 people
- More than 11,900 hectares under cultivation
- Approximately 125 potato businesses of which 35-50 are growers, including eight key packing sheds
- Industry is becoming more and more vertically integrated
- Exports represent 2% of production
- Potatoes contribute to 33% of interstate horticultural trade, worth $171m

Principle South Australian Growing Regions

- **Fresh Market Sector**
  Riverland, Mallee, Adelaide Plains (Virginia)

- **Processing Sector**
  Limestone Coast, (McCains/Safries has a processing plant at Penola), Southern Murraylands

- **Seed Sector**
  Kangaroo Island, Mallee, Limestone Coast

Overall, 41% of potatoes are grown in the Mallee region, 45% in the South East region and 14% on the Adelaide Plains.

Terms of Reference

Potatoes South Australia Incorporated largely endorses the detailed scientific review prepared by Dr Kevin Clayton-Greene on behalf of AUSVEG in response to the Draft report on the review of the importation of fresh potatoes for processing from New Zealand.

The terms of reference for the proposed importation of potatoes from New Zealand include:

- The validity and supporting scientific evidence underpinning the Pest Risk Analysis included in the New Zealand Potatoes Import Risk Analysis 2009;
- The extent of scientific knowledge and understanding of the Tomato Potato Psyllid and other pests identified in the Draft review of import conditions; and
- Related matters

Pest Risk Analysis

The Pest Risk Analysis (PRA) (2009) assesses the plant quarantine risks associated with the importation of potatoes from New Zealand. This work was undertaken by DAFF Biosecurity in collaboration with the New Zealand Ministry for Primary Industries. The process to establish whether or not risks are found to exceed the level of quarantine risk that is acceptable to Australia is unclear and incomplete as only three acknowledged exotic pests and diseases are considered by DAFF. These are:

- Potato Cyst Nematode (PCN)
- Zebra Chip complex
- Black Wart Disease

All other potential pests and diseases have not been considered.

Additionally, no attempt has been made by DAFF to update its science over the past three years since the "Final pest risk analysis (PRA) report for '*Candidatus* Liberibacter psyllaurous' in fresh fruit, potato tubers, nursery stock and its vector the tomato-potato psyllid" was produced in September 2009. There has been considerable research done in the past three years (Hall, pers. comm. 2012) and this should have been reflected in the Draft report. This is despite advising that additional information made available through the literature and the consultation process which is relevant to the assessment would be taken into account.

The one exception is a post-2009 scientific reference (Pitman et al, 2011), quoted because of its relevance in nomenclature for the disease. However, in conversation with senior DAFF Biosecurity staff it was stated that all research from 1931-2012 had been taken into account (Grant, pers comm. 2012). None is referenced in the Draft report.

Overall there is minimal referencing other than to Government publications despite the expansive research internationally.

The PRA must be based on scientific evidence. However, it appears that if there are no specific studies available for certain factors essential to the evaluation of risk, then these factors do not require consideration and a low risk level is allocated. This is poor risk management practice and violates recognised procedures for the identification and quantification of potential threats.

It should be noted that the PRA released in September 2009, is referred to as a "Final PRA". This is surprising as the pest for which the analysis had been produced had only been formally identified for a year (Liefting et al, 2008) and its effects only known for less than fifteen years. In 2009 almost nothing was known about its biology, lifecycle and evolution and the reasons why such a disease complex should suddenly appear. International knowledge of the complex has advanced since 2009 but there is still much that is unknown.

Research on psyllids is also increasing but questions remain concerning their behaviour, incursion effects, mutation, adaptability to climatic changes, alternative host plants and the possibility of Australian native psyllids becoming vectors for *Candidatus* Liberibacter psyllaurous. The only known psyllids in Australia associated with the Solanaceae are two *Acizzia* spp. (Psyllidae, Acizziinae). They have been reported from *Solanum mauritanum* and *S. melongena* (Kent & Taylor 2010).

What is apparent is that in every instance where this disease complex has been reported in the world there has been a devastating effect upon potato production.

The PRA, as a major supporting document to the Draft report should be disregarded.
Any attempt to keep abreast of available scientific research has not been stated in the documentation. There is a distinct lack of citation. It is certainly not the responsibility of industry to provide updates on a 'Final' PRA provided by DAFF.

There is simply not enough data available to adequately address the risk; therefore the risk is too high.

Extent of scientific knowledge and understanding of the Zebra Chip disease complex and other diseases

The importation of fresh potatoes for processing from New Zealand will result in potatoes infected with *Candidatus* Liberibacter solanacearum (Lso) and other exotic diseases arriving in Australia. This is indisputable. No application for an importation permit has been lodged by an Australian entity to date (Grant, pers comm. 2012) but the question is when and how long will the scientific community and industry have to prepare for this event?

The Tomato Potato Psyllid (TPP) (*Bactericera cockerelli)* is the vector for the bacterial disease *Candidatus* Liberibacter solanacearum (Lso) which affects solanaceous crops, especially potatoes, tomatoes, capsicums and tamarillos. This is known as the Zebra Chip disease-vector complex. TPP is a sucking insect which reduces yield through reduced plant vigour and resultant yield loss through insect feeding. In potatoes TTP indirectly transmits Lso which results in plant death and poor tuber quality through browning of flesh which is especially noticed in processing potatoes when cooked resulting in the disorder Zebra Chip.

It must be noted that Zebra Chip disease complex is new and was only first described in Mexico in 1994 (Secor et al, 2006) and was first recorded as a problem in Texas, USA in 1999 in potato crops. It has since been reported in all states west of the Mississippi in the

USA, with the exception of Utah. However, Lso as the causal agent was not identified until 2008. It has now been reported as far north as Canada.

The disease complex was an accidental incursion to New Zealand in 2006 (Biosecurity Australia, 2009) and by 2009 had spread across the country. In 2011 the New Zealand potato industry suffered a loss of $120m due to the disease complex.

New information has been discovered since then although the complex is still relatively poorly understood. However, the importance of the disease is reflected in the millions of dollars which have been spent on research since its first occurrence (Schreiber et al 2012).

It is now established that there are at least two strains of the disease complex which may have evolved independently. There is also a suggestion that there are differences between the disease found in USA and that found in New Zealand but the research is still underway (Smith, 2012).

The Draft report and PRA both recognise that infected tubers could be a potential pathway for Zebra Chip disease. This means that the vector is by-passed. Recent work from the USA suggests that tubers harvested and assessed as disease-free have in fact developed Zebra Chip disease complex after months in storage (Horne 2012). The only way to prevent this situation is to not allow the importation of potato tubers from New Zealand. Additionally, there is currently no non-destructive test for ascertaining whether or not potato tubers contain Lso.

It is also unclear whether Zebra Chip complex can be vectored by different psyllids other than TPP. Potentially, Australia's many psyllids species could vector the disease. The apparent vector specificity gives a high level of confidence that the native psyllid will not vector the bacterium (Findlay, pers comm. 2012) but this is not stated in the Draft report.

To date, Liberibacter have been unable to be cultured outside their insect host and appear to be a type of endosymbiont (inside dependency) which are essential for insects, such as psyllids that rely upon phloem feeding, to obtain a nutritionally balanced diet (Nachappa et al, 2011). The area of pathology associated with plants is not understood.

Related Matters

Market Access

The relaxation of the suspension of market access to Australia for fresh potatoes for processing from New Zealand will result in Zebra Chip infestation in the Australian potato industry at some point. This will have catastrophic effects along the value chain from the production of seed (certified and commercial) through to the consumer.

Currently, Australia is looking to increase its export markets for potatoes; in South Australia international exports (predominantly to Southeast Asia) are now just 2% of production. At present, both Japan and South Korea are seeking market access to import potatoes from Australian states that are PCN and other pest and disease free (James, pers comm. 2012). It is interesting to note that this coincides with the South Korean Government's decision to shut off all shipments of fresh potatoes from Oregon, Washington and Idaho (since 17 August 2012) because of concerns over the presence of Zebra Chip in Pacific Northwest potatoes.

If the proposed measures as described in the Draft report are accepted, international exportation of Australian premium potatoes and seed will be potentially restricted, if not halted.

Trade Agreements

In discussions with DAFF Biosecurity, senior staff indicated that potential future legal challenges under World Trade Organisation (WTO) Sanitary and Phytosanitary Agreements, to which Australia has been a long term signatory, could result, if market access for New Zealand is unfairly denied. The PRA must be based on scientific evidence. Regulation 69B in the *Quarantine Regulations 2000* defines a risk analysis as the assessment of the level of quarantine risk associated with proposed importation and, where necessary the assessment of risk management options. There is no scope to consider trade implications of any potential decisions made in the PRA process. The *Quarantine Act 1906* describes quarantine as including measures that prevent or control the introduction, establishment or spread of diseases or pests. Trade implications of quarantine decisions are also not considered in the Act.

Australia is a net exporter of agricultural product and generally, WTO rulings on trade are favourable (Grant, pers comm. 2012). However, in this case, a security breach would result in very significant economic consequences for the Australian potato industry value chain if the disease became established. DAFF Biosecurity acknowledges this. It is difficult to understand how denial of market access could be described as 'unfair'.

Prior Biosecurity Breaches in Horticulture

Despite the 'rigorous' assessment of the risk management measures and import conditions employed in the import pathway for horticultural products at the national border, the introduction and establishment of Western Flower thrips, *Frankliniella occidentalis* (Pergande) occurred in Australia eight years ago.

It is native to the western states of North America but is now a major global crop pest causing millions of dollars of damage across every continent. Its spread has been predominantly by the movement of horticultural material, such as cuttings, seedlings and potted plants (Kirk & Terry, 2003). It now has hundreds of plant hosts and chemical control is difficult and costly due its resistance to insecticides in many populations.

As well as attacking produce directly, it is the most efficient vector of several viral diseases of plants including Tomato Spotted Wilt Virus which infects more than 900 plant species, including vegetable crops and potatoes. There is no treatment available to rid a plant of the virus once it is infected. The arrival of Western Flower thrips has been associated with an upsurge in crop damage by this virus in Australia.

This was a biosecurity breach and the Australian potato industry continues to pay for it. The level of protection was not appropriate.

Conclusions

Overall, the Draft report and the Pest Risk Analysis upon which it is predicated, lack rigour, objectivity, current robust scientific methodology and current scientific research findings. There is also selective presentation of data. Consequent pest management procedures are also unclear.

In summary:

- The PRA is out of date (2009)
- There is little known about TPP and the zebra chip complex, including why it should suddenly appear in the mid-90s;
- There is very little current science and much opinion in both documents;
- Absence of evidence does not mean the risk level is low;
- Despite the considerable amount of research since 2009, none has been incorporated into the documentation;
- The suggested quarantine control measures are vague and demonstrate little understanding of the process of packing and shipping
- Of all the pest and diseases in New Zealand that affect potatoes only Potato Cyst Nematode (PCN), Zebra Chip and Black Wart disease are considered;
- The area of PCN is also poorly covered and does not address the issue sufficiently;
- The system is flawed. Science-based means there must be solid scientific evidence to prevent imports. If there's no evidence, DAFF has no reason to prevent the importation.

It is also understood that the Draft report was released for stakeholder comment and for the provision of scientific information that the industry believed was relevant to the biosecurity risks associated with the proposed conditions under which potatoes may be imported from New Zealand for processing. The report recommends that potatoes only be permitted if they have been washed and/or brushed to remove soil, have been subjected to quarantine inspection by both New Zealand and Australian officers, and are processed under quarantine control. All waste must be disposed of under quarantine security.

Fresh, whole brushed or washed potatoes from New Zealand will not be available for retail sale in Australia because the biosecurity risk is too great for all diseases, and particularly for Zebra Chip (Findlay, pers comm. 2012). This implies that if there is a biosecurity breach, DAFF recognises the significant consequences for Australia should the disease become established.

DAFF Biosecurity will then finalise the import conditions for fresh potatoes for processing from New Zealand, taking into account stakeholder comments (DAFF Biosecurity 2012). This implies that the importation of processing potatoes is a 'fait accompli' and that stakeholder input may not be considered as significantly as it should.

Whatever the interpretation of language, statements and regulations throughout the PRA and Draft report, there is clearly a poor use of terminology and inadequate description. The communication of all information has been severely lacking in depth and has been inconsistent at best.

Overall, the threat of this pest to Australian potato production cannot be underestimated. Experience in USA and New Zealand has demonstrated that the cost of dealing with it by the

use of insecticides is massive and is likely to cause growers to re-consider remaining in the industry.

There is a potential catastrophic yield loss of up to 50% ($0.25b) nationally and for South Australia, the nation's largest producer of potatoes, this loss is likely to exceed $100m.

Recommendations

Potatoes South Australia Incorporated and the potato industry value chain stakeholders appreciate the requirements for free trade agreements under the World Trade Organisation (WTO).

However, to protect this industry worth in excess of $1/2 billion from the introduction of exotic diseases, the following recommendations are made:

- A more reasonable, rigorous and transparent evaluation of risk is completed to ensure relevant mitigation strategies are employed;
- Adoption of up-to date international and national scientific research to better evaluate risk (not a PRA 2009);
- Adjusted timeframes for stakeholder review reflecting the requirement for more inclusive industry debate;
- Recognition that industry members are the bearers of risk, not DAFF Biosecurity or the Government of New Zealand (Ministry for Primary Industries);
- Improved communication at all levels and through all mediums by DAFF Biosecurity;
- Inclusion in the PRA of all pests and diseases present in New Zealand which pose a threat to Australia; and
- A "stop the clock" option is exercised until the biology and evolution of these potentially devastating insects and bacteria are more thoroughly understood through the conduction of appropriate research (Growcom 2012).

The PRA and the Draft report must be rejected; Australia's clean, green image is on the line and the potato industry will be in ruins.

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