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Dear Senators

Thank you for the opportunity to comment upon the implications of the restriction on the use of fenthion in Australia's apple and pear industries.

Apple & Pear Australia Limited (APAL) is the peak industry body representing the interests of commercial apple and pear growers in Australia in matters of national importance including regulation and legislation, marketing, research and development.

As you are aware, fenthion is a broad spectrum organophosphate (OP) insecticide widely used to control insect pests in fruit production.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) suspended the use of fenthion on 31 October 2012 for all home gardeners and in the commercial production of all deciduous tree fruits except apples, pears, nectarines, plums and cherries (restricted uses in WA only).

The use of fenthion for apples and pears is now regulated under two permits: PER13840 for WA and PER13841 for all other jurisdictions. These permits allow fenthion to be used to control fruit fly (WA, Queensland, NSW and Victoria), codling moth (NSW, Victoria, SA), light brown apple moth (NSW, Victoria, SA), Rutherglen Bug (Queensland, NSW, Victoria, SA), and wingless grasshopper (NSW, Victoria). The permits will expire on 30 October 2014.

It is our understanding that a final decision on the uses of fenthion in Australia is expected soon after the completion of all components of the APVMA's fenthion review in mid-2014.

It is our expectation that fenthion will be fully suspended in Australia. Fenthion is not registered for use on food producing plants in the European Union, USA, Canada or New Zealand.

The likelihood of a suspension in the registration of fenthion has come as a blow to many apple and pear growers, because there are no alternative cover sprays that are as effective in the control of Mediterranean and Queensland fruit fly. Cover sprays like fenthion are particularly effective because they kill adult fruit flies on contact, as well as penetrating the edible fruit flesh, killing eggs and larvae within

apples and pears. The restricted use and likely suspension of fenthion is particularly troublesome because of the 2011 suspension of registration of dimethoate, another common cover spray chemical used against these pests.

In response to the Senate Committee's question about the **effectiveness and sustainability of chemicals other than fenthion**, APAL notes the following:

Maldison and Trichlorfon

Neither Maldison nor Trichlorfon are registered for use in apples and pears. We have not sought a permit for the chemistry. It is our understanding that broad-spectrum is becoming a no-go zone for companies and most western countries are de-registering organophosphates – including maldison and trichlorfon. In Australia, maldison is currently the subject of an APVMA review and trichlorfon has been nominated as a Priority 1 candidate for future review by the APVMA.

Bait Sprays

Whilst spinosad (PER12753) and spinetoram (PER12590) are permitted for use as insecticides in bait sprays, this technique is not common amongst commercial apple and pears growers because they are not particularly effective during high pest pressure periods.

Bait spraying can fail with crops that are highly susceptible to fruit fly attack. For example, the Department of Agriculture and Food Western Australia (DAFWA)¹ has noted that some female Mediterranean Fruit flies find the attractiveness of ripening fruit more attractive than the bait. Although this is particularly the case in stone fruit, many apple and pear growers also grow stone fruit or are located near stone fruit orchards. Infestation in one crop can quickly spread to others.

Bait sprays are generally applied as part of a systems approach such as area wide management. A successful area-wide approach in turn requires close cooperation between commercial producers, nearby backyard growers and local government. Often this is difficult to achieve in apple and pear growing regions which are located around urban fringes or near large regional centres.

Additionally, baits need to be applied regularly (often weekly), and more often if it rains or if overhead irrigation is used (which is common in apple and pear production).

Lure and kill devices

Lure and kill devices (mass trapping) are extensively used in apples and pears as part of a systems approach. Sufficient density of devices needs to be installed for them to be effective. Mass trapping works best if used over a wide area because it targets newly-emerged adult flies before they become sexually mature, thereby preventing egg-laying. Lure and kill devices are never adequate as the sole means of control

¹

http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/ins/pp/hort/recommended%20medfly%20control.pdf

under medium to high infestation pressure and are generally combined with bait spraying.

Clothianidin (Samurai®)

The APVMA issued a permit (PER14252) for the use of clothianidin to control fruit fly in pomefruit and stonefruit in September 2013. In the past clothianidin has been registered for use by apple and by pear growers for the control of Codling Moth, Woolly Apple Aphid, longtailed mealybug and Tuber mealybug.

There are three major drawbacks associated with clothianidin which is used as a cover spray:

- a) The product may not be effective on its own depending upon the level of pest pressure during the season. In many circumstances clothianidin is best used as part of a suite of mechanisms under a systems approach for the effective management of fruit fly. The potential for resistance build-up requires multiple options as part of area wide management including trap monitoring, baiting, and lure and kill traps and maintenance of orchard hygiene.
- b) Clothianidin can be dangerous to pollination bees as it will kill bees foraging in the crop or in hives which are over-sprayed or reached by spray-drift. Residues may remain toxic to bees several days after application. This can be managed with appropriate application, and in any case, little spraying is generally undertaken during the pollination window.

However, the longer term availability of neonicotinoids such as clothianidin is in doubt. For example, in January 2013, the European Food Safety Authority stated that neonicotinoids including clothianidin pose an unacceptably high risk to bees². Whilst their concerns related primarily to a perceived high acute risk to honey bees arising from exposure via dust drift for the seed treatment uses in maize, oilseed rape and cereals, the use in of such chemicals within horticulture is likely to be re-assessed.

- c) Clothianidin may have adverse effects on some non-target beneficial insects – particularly to foliage dwelling predators where IPM is practiced. This is because of the systemic nature of clothianidin which is held in the sap flow for longer than other spray chemicals;

According to Horticulture Australia Limited (HAL)³, the permit application for clothianidin use against fruit fly was based on efficacy data generated as part of a HAL/industry funded project (SF12012) and on residue trial data reflecting a different use pattern than that approved in Australia. In considering the permit application the APVMA underscored the limited amount of residue data available matching the nominated use pattern and flagged concerns over the potential for clothianidin residues impacting on trade in export destinations, i.e., where maximum residue limits (MRLs) are lower than those set in Australia.

² European Food Safety Authority (16 January 2013) "[Conclusion on the peer review of the pesticide risk assessment for bees for the active substance clothianidin](#)" *EFSA Journal* **11**(1):3066

³ Project proposal, personal communication November 2014.

As clothianidin is new to Australia against fruit fly, there is currently a shortage of information on the likely residues of the product following its application for fruit fly control under PER14252. This has potentially significant implications for apple and pears grown for export in fruit fly endemic areas, i.e. limited capacity to ensure MRL compliance in export markets.

This is particularly important because the MRL for clothianidin acceptable by importing countries range from 0.3 mg/kg to 1 mg/kg, well below the temporary Australian limit (set at 2 mg/kg for apples and pears).

To try and address this data gap in the short-term HAL has proposed that a project be initiated where samples of fruit, from pome fruit orchards treated with clothianidin under PER14252, are collected and sent for analysis. This, coupled with the collection of grower spray information would help build a residue profile of clothianidin use under the permit. The collection of this information would have the dual benefit of clarifying the residue situation for growers of export fruit, as well as assuring the APVMA that residues would be manageable from a trade perspective, thereby building confidence with regard to the eventual renewal of the permit which expires on June 2015.

APAL has written to the National Residue Survey division of the Department of Agriculture indicating our support for the release of excess reserves under the apple and pear program to support the HAL initiated data generation project on clothianidin.

Post-harvest Treatments

The permit PER13841 allows the use of fenthion as a cover spray in apples and pears. It does not, however, permit the use of fenthion as a post-harvest treatment, as was previously allowed.

Post-harvest treatments refer to the application of agricultural chemicals to harvested produce for the purpose of destroying pests that may adhere to the fruit and cause damage or deterioration during the period between harvest and consumption.

With the suspension of dimethoate and the restricted use of fenthion, apple and pear growers no longer have access to these chemicals for use as a post-harvest treatment. Previously many growers undertook dipping or post-harvest flood-spraying with either dimethoate or fenthion against fruit fly and mealy bug.

Whilst apple and pear growers do have access to methyl bromide, this is generally used against fruit fly as part of a phytosanitary protocol to meet export requirements and is highly undesirable due to the negative impact on fruit quality.

Nevertheless, the need for post-harvest chemicals is not as important in the apple and the pear industries as is the case for some other tree fruits. This is because a significant proportion of the apple crop, and to a lesser extent, pears are cool-stored after harvest for later release to the market. Cool-storage can be used as a cold-

disinfestation mechanism. That is, the maintenance of produce at specified cold temperatures over a specified time to control possible fruit fly infestation.

In response to the Senate Committee's question about the [short and long-term decision to restrict fenthion use](#), APAL notes the following:

- The APVMA instructions issued on 31st October 2012 for the use of fenthion is an interim regulatory action based on the fenthion Residues and Dietary Risk Assessment Report (September 2012), which found that the use of fenthion on certain crops could lead to exposures to levels of fenthion in treated produce that reduce, but don't breach the margins of safety put in place to protect consumers. It is APALs understanding that the interim regulations will remain in place while the APVMA completes further assessments for OHS and environmental impacts of use of the chemical. A number of questions remain:
 - whether APVMA decisions should be based on evidence that the product use would breach safety margins rather than have a "potential to reduce" safety margins;
 - the time frame between APVMA coming to a final decision and the notification of that decision and whether there will be any transition period for growers if the decision is to totally suspend fenthion in Australia.
- In the short term, the decision created much angst amongst certain growers who relied upon cover sprays to control fruit fly. As the APVMA does not have a role in considering available alternatives and because of a lack of consultation with industry (see below), considerable anxiety was created (which remains) about the availability of tools to manage pests that are endemic within growing regions.
- In the short and medium term, greater awareness of area wide management systems is required. More funds need to be diverted to improve the level of awareness, not only amongst growers, but with local and State governments. This is because systems approaches require a concerted effort by all parties, not just commercial apple and pear and other fruit growers.
- The longer term requires greater effort in developing management tools to control fruit flies which act not only as production pests but hamper the freedom and cost competitiveness of domestic and international trade. The recently announced decision by the South Australian government to invest in a Sterile Insect Technology facility for Queensland fruit fly goes some way toward addressing the issue. Nevertheless industry will first need to redirect considerable Research and Development (R&D) levy funds to support the research that will be undertaken within that facility to breed sterile insects and understand the most effective release mechanisms. Fair, equitable and cost effective mechanisms for growers and governments to purchase the sterile flies for release for fruit fly management control will also eventually need to be developed.
- Presently we are referring to Mediterranean fruit fly and Queensland fruit fly. Australia has quite a number of indigenous fruit flies and research and production tools to control those flies has yet to be undertaken.

- The National Fruit Fly Strategy Implementation Plan, finalised in 2010, has failed to attract on-going funding support, in part due to constrained resources amongst grower groups. Investment and engagement by Commonwealth and State governments is required if a viable export oriented horticulture sector is to become a reality.

In response to the Senate Committee's question about the **transition arrangements following the restriction on the use of fenthion**, APAL notes the following:

- The APVMA was not required to find or recommend alternative products for growers to use as a replacement for fenthion (or dimethoate, in an earlier suspension decision). A lack of consultation with grower groups and peak industry bodies such as APAL created an information deficit;
- Transition to area wide management or systems approaches to fruit fly can be difficult because they rely upon a great number of solutions rather than a "one-fix" and rely upon many parties (neighbouring orchards, local government and home gardeners) to work in concert. There is considerable potential under systems approaches for one party to "opt -out" or "free-ride" and break-downs occur. The resulting market failure requires government intervention. Unfortunately many state Governments have withdrawn from this space. There is also market failure in the generation of new production tools by international chemical companies to create solutions to Australian pest management – this is partially a result of Australia's relatively small size, particularly in relation to indigenous pests that have no relevance to the larger European, USA and Asian chemical markets.

In response to the Senate Committee's question about the **roles and responsibilities of relevant departments and agencies of Commonwealth and State governments**, APAL notes the following:

- The timelines following the APVMA decision were relatively short: The APVMA announced a proposal to suspend the use of fenthion products in certain horticultural situations on 11 September 2012, but an invitation to the product registrant, industry and grower groups to submit information or data was required a mere two weeks later (by 25 September 2012).
- The APVMA is not currently required to find or recommend alternative products for growers to use because the APVMA's role is that of an industry regulator. APAL supports this position. Nevertheless, the APVMA or relevant State and Federal agencies should provide greater "early insights" into its likely decisions to enable industry to liaise with chemical companies to identify opportunities for replacement chemicals to meet market needs.
- Commonwealth, State and local governments need to better understand the market failures within the chemical registration and permit application process in Australia. The APVMA does not generate data to support applications for chemical uses or commission data to be generated. Appropriately, as a regulator the APVMA relies upon chemical companies and grower groups to identify a need and develop a suitable product to manage pests and diseases of production and trade. However, as mentioned above, the market for chemicals in Australia is very small and

chemical companies have little opportunity to recover the costs of research that pertain to Australian growing conditions and production patterns or to Australian indigenous pests that would not have a market elsewhere. Data generation is therefore expensive. A grower or a small number of growers could invest in this research but the ability of others to benefit from positive outcomes, i.e. to free-ride is high. This is one reason why R&D levies are compulsory in Australia and levies could be and often are, directed toward data generation on chemical efficacy/residue/health issues. But growers, particularly in small industries with limited leviable production, cannot sustain the multiple competing claims upon the R&D levy to address the many market failures experienced within horticulture. An added concern is the current first principles review of the APVMA's fee structure containing proposals for 100% cost-recovery for permits. Such a step would virtually eliminate the ability of many horticultural industries to address pest management gaps.

- APAL is fully supportive of a national system to register agricultural chemicals to ensure that chemical products available to farmers are efficacious; they will not harm themselves, their family, employees or their customers, nor damage their crops or the environment.
- APAL is fully supportive of measures to improve the efficiency and effectiveness of agricultural chemical regulation. APAL looks forward to:
 - the Proposed Agricultural and Veterinary Chemicals Legislation Amendments to be introduced by the Government to rectify recent legislative proposals to review chemical registration on an on-going basis;
 - reforms designed to cut the unnecessary red tape and to provide farmers with access to cheaper, modern, cleaner and safer chemicals. APAL seeks greater consultation in this regard; and
 - a resolution to national harmony in regulation of chemical use.

Yours sincerely



John Dollisson
Chief Executive Officer