

# Stakeholder comments

## Draft report of Part 2 of the pest risk analysis for cut flower and foliage imports

### Comments submitted by: Flower Industry Australia

FLOWER INDUSTRY AUSTRALIA (FIA) is the newly formed national representative body for Australian flower growers and florists. FIA represents and advocates for its grower and retailer members at both national and state level on issues affecting the industry. The association is governed by a board of appointed directors who are either growers, retailers and/or in possession of skills deemed beneficial to the Association. Members pay an annual membership fee, based on how they conduct their business (grower versus retailer), with corresponding voting rights. FIA recognises the important role that the Department of Agriculture, Water & Environment (DAWE) plays in coordinating and delivering national biosecurity policy, and we welcome the opportunity to make a submission to DAWE with regards to the 'Draft Pest Risk Analysis Part 2' (the PRA), which assesses arthropod pests including beetles, flies, bugs, wasps, bees and ants, moths and butterflies.

Millions of cut flowers arrive into Australia from across the globe, carrying a range of insects that are considered quarantine pests, as well as other potential new pests to Australia. In addition, these pests may also carry pathogens and parasites that could harm Australia's native plants or animals (Monash University and Invasive Species Council, 2019). The flower import sector is one of Australia's highest risk pathways. The Australian flower industry therefore needs absolute confidence that the biosecurity system enforced by DAWE is science-based, independent and transparent. Whilst FIA supports trade between countries, this trade must not be to the detriment of our own horticultural industries and the environment due to unwanted entry of pests, pathogens and parasites. FIA has reviewed the biosecurity risk posed by the current import arrangements for cut flowers and foliage outlined in the draft PRA, and the document raises some concerns which are now discussed.

#### **1. The revised import conditions introduced on 1 March 2018 have not resulted in an overall decrease in the rates of arrival of live pests of biosecurity concern, nor adequately improved the occurrence of non-compliant shipments**

According to Saccaggi et al. (2016), border security begins in the exporting country, where the exclusion of pest species from commodities should be achieved by the provision of appropriate measures. FIA is concerned that the measures being undertaken in the exporting countries are grossly inadequate, as there are unacceptably high levels of interceptions and non-compliance taking place. The PRA compares the effectiveness of the three accepted pre-export methods of managing pests used by 11 countries that export cut flowers and foliage to Australia, including countries requiring import permits. Australia's ALOP is expressed as providing a high level of sanitary and phytosanitary protection aimed at reducing risk to a very low level, but not to zero (Department of Agriculture Water & Environment, 2020). Previously, the Department has stated that it aims to reduce non-compliance rates with flower imports from more than 50% to less than 10% (Department of Agriculture & Water Resources, 2018). The data presented in the PRA shows that the

National Plant Protection Organisation (NPPO) approved systems approach consistently fails in almost all of the countries reported. The data shows that only two countries have managed to achieve an ALOP of 10% or less using this method. Pre-export methyl bromide fumigation was more successful but did not achieve the 10% ALOP in two of the four countries charted. The new regulations require the exporting country's NPPO to certify the flowers as 'pest-free' and to fumigate them before they are shipped to Australia. However, it seems there is still a great deal of non-compliance since implementation of the new measures, with non-compliance rates continuing to sit well above 10%. Countries 1 and 4 have shown fewer 'failed' consignments in January 2020 than in January 2019, but Countries 2 and 3 have not shown an improvement in non-compliance with the number of 'failed' consignments increasing in January 2020. Countries 5 to 11 have essentially remained the same. FIA believes that the level of non-compliance is still unacceptably high. The expertise, experience and dedication of personnel carrying out phytosanitary methods is critical to their ultimate success (Saccaggi et al. 2016). In order to achieve an appropriate ALOP and adequately protect Australia's borders from arthropod pests, FIA believes that DAWE must prioritise efforts to teach, strengthen and expand the skill sets of border control personnel offshore. In countries such as Kenya for example, the biosecurity approach is known to primarily focus on human and animal health rather than plant health and land use (International Plant Protection Convention 2016). If sampling and inspection methods were haphazard, identifications incomplete or uncertain, and relevant biological information lacking, the information generated could have serious limitations (Saccaggi et al. 2016). The Kenyan approach to biosecurity has increased capacity in the area of zoonosis (diseases which can be transmitted to humans from animals) but not necessarily in other aspects of biosecurity (International Plant Protection Convention 2016). Weak biosecurity in one country threatens neighbouring countries and whole continents. FIA recommends that DAWE should commit to suspend imports where repeated non compliance is occurring, and/or implement additional biosecurity measures which Australian agricultural industries can have confidence is absolute best practice, particularly those occurring offshore.

## **2. New import conditions requiring each exporting country's National Plant Protection Organisation to certify flowers as free of quarantine pests before they are sent to Australia is failing**

FIA is concerned that the requirement of the exporting country's NPPO to verify that the cut flowers and foliage for export are free from live pests is a farce – the compliance data presented in the PRA shows that live pests are still arriving, so export countries must be providing false certification or their systems approach is ineffective. Australia is heavily relying on offshore mitigation measures with only a piece of paper as a measure of integrity. Fumigation treatments have been noted to be ineffective at times, and live pests found even after several treatments have taken place (Inspector-General of Biosecurity, 2015). Insects can become resistant to fumigants, and insects that have resistance to one fumigant can, in some cases, also be resistant to others (Food and Agriculture Organisation of the United Nations, 1984). If a population is repeatedly treated with the same insecticide, each new generation has increasingly higher tolerance, leading to the production of a "resistant" strain. This is a genetic characteristic that is passed on from one generation to the next. FIA would like to see regular or random post-fumigation efficacy checks implemented to establish the effectiveness of fumigation treatments, and would like to see rotation of fumigants (e.g. methyl bromide and phosphine), rather than such heavy reliance on one fumigant both offshore and onshore. In addition, FIA believes that the issue of insecticide resistance has not been given enough

attention by DAWE and would like studies such as next generation sequencing used to detect resistance genes and viruses of biosecurity concern. This research could help to determine which pest species may carry insecticide resistance and whether such resistance is ubiquitous or host and/or region specific. The FIA believes that this process was also substantially overlooked in PRA Part 1. In PRA Part 1, the Department stated that evidence was lacking at that time to regulate resistant strains of both *Tetranychous urticae* and *Myzus persicae*, and that specific evidence of pesticide resistance would be considered if it became available. FIA would argue that it is in the Department's best interests to ensure that this type of research is carried out through departmental funding, instead of waiting for it to appear from another source. FIA understands the requirement for DAWE to increase agricultural trade as well as manage biosecurity, but this has been argued to apply pressure to be lenient with import conditions it places on other countries to avoid retaliatory measures (Invasive Species Council 2019). Agreements such as those under the International Plant Protection Convention (IPPC) aim to establish standards to ensure fairness and technical soundness of trade control measures, but competing interests, the economic benefits of free trade and the sheer volume of global transport is impeding the prevention of pest establishment (Garnas et al 2016). The Inspector-General of Biosecurity (2015) warns of the temptation to pay less attention to biosecurity risks as a cost-cutting strategy.

### **3. Devitalisation, acceptable level of incursion and the import permit process require greater clarity**

FIA is concerned that whilst nursery stock imports have a zero tolerance policy and must undergo devitalisation treatments, PCR testing and varying lengths of quarantine regimes depending on their source country, the same thorough methods do not apply to cut flowers. FIA understands that devitalisation of nursery stock occurs in the country of export and is confirmed as having been effective through quarantine processes in Australia. However, the import processes outlined in the PRA show that devitalisation of cut flowers is solely relied to be undertaken by the exporting country, with the only 'proof' that this has occurred being the presence of an additional declaration on the Phytosanitary Certificate. The FIA acknowledges that the main entry pathway for the bacterium *Xylella fastidiosa* is the trade and movement of plants for planting, or incursion of one of the pathogens known insect vectors, but devitalisation processes are important and a significant issue for the cut flower industry. Although the cut flower trade is considered a minor pathway with a low likelihood of entry (European Food Safety Authority 2015), it could be of greater risk than anticipated if cut flowers have not been appropriately devitalised, and should not be discounted if devitalisation is not confirmed onshore. There are a number of factors which might restrict the effectiveness of devitalisation (Department of Agriculture and Water Resources, 2018), including 1) it is only required for a small proportion of cut flowers, 2) the age, quantity and concentration of the glyphosphate mix are imperative to successful treatment, 3) chemical uptake is reduced if the stems are not cut within 2 hours of treatment, 4) stems may not be treated for long enough, 5) treatment must be applied at room temperature, 6) glyphosphate uptake can be impacted by packaging such as plastic sleeves, 7) staff carrying out the procedure may be insufficiently trained, and 8) treated and untreated flowers may become mixed prior to export. FIA is also concerned about two other factors not listed. Firstly, the potential effects of serial dilution of glyphosphate over time as stems are repeatedly dipped into the same solution. Secondly, the amount of dissolved salts in the water used to prepare the glyphosphate mix as a result of the water hardness - dissolved salts in hard water may reduce glyphosphate's effectiveness, particularly calcium and magnesium salts. Plants

absorb less glyphosate bound with calcium or magnesium salts than the formulated salt of glyphosate, thus reducing glyphosate activity (Hartzler et al., 2006). Anecdotal evidence within the Australian flower community suggests that cases of ineffective devitalisation and subsequent propagation of cut flowers do occasionally occur. Large et al (2006) provide an example of this having occurred within New Zealand's imported cut flower trade. In addition, sampling handling procedures of departmental staff may also affect propagation trials (Inspector-General of Biosecurity, 2015). The FIA requests a review of the devitalisation policy for cut flower imports, and particularly seeks a requirement for viability testing at the Australian border.

DAWE has stated previously that it aims to reduce non-compliance rates with flower imports from more than 50% to less than 10% (Department of Agriculture & Water Resources, 2018). This target (or some sort of numerical value) must be clearly communicated to exporters, and any leniency in the import permit system must be removed. For example, DAWE states that import permits 'may' be required if for example a country continues to export consignments with high levels of live pests. Maintaining effective quarantine requires constant vigilance as well as cooperation from all relevant trade partners (Garnas et al 2016). If a country makes improvements, these improvements must be quantified (what level of increased compliance measures as an improvement?) and export countries need to know what the acceptable incursion rate they are required to meet is, and the timeframe within which this compliance must be met. DAWE states that Australia will require import permits for flowers from Kenya, Colombia and Ecuador that are produced under the NPPO systems approach, to enable greater oversight (Department of Agriculture 2019). These countries have 'very high' rates of non-compliance and high volumes of trade. FIA would like to see more information regarding the import permit process, including how the decision-making around permit renewal is managed and what level of non-compliance merits suspension of a pathway. FIA notes (and wholeheartedly supports) that recently, Malaysian chrysanthemum imports were suspended due to repeated and consistent detections of *Liriomyza huidobrensis* (serpentine leafminer) on imported chrysanthemums, which is a priority plant pest for Australia. FIA hope that this action is a sign of tougher stances that will be applied from this point forward.

#### **4. The overall risk from Coleoptera, Diptera, Hemiptera, Lepidoptera and Hymenoptera pest species is too high to allow consignments containing ANY of these groups to be released without additional measures**

FIA is concerned that the overall risk from these arthropod groups is too great. The department assessed 582 species of arthropod pests in Part 2 of the PRA. Of these, 361 species (or 62%) pose a biosecurity risk as they are either classed as quarantine pests (357 species) or potential regulated articles, capable of transmitting pathogens of biosecurity concern (4 species). 41 other species (7%) are also of biosecurity concern as they have the potential to be predators or parasites, are able to transmit human and animal pathogens, or they are considered nuisance pests. A further 17 species (3%) are also a biosecurity concern but rarely intercepted, so have not been fully risk assessed. From these figures therefore, over 70% of the Coleoptera, Diptera, Hemiptera, Lepidoptera and Hymenoptera arriving in Australia associated with cut flower imports are either quarantine pests, regulated articles or of biosecurity concern to some degree. In addition, some insects within these groups such as ants, parasitic wasps and bees are known to reproduce asexually, meaning that they have a superior ability to colonise and spread rapidly as single individuals that can start new populations without the need for a mate (Garnas et al 2016).

With this high level of risk across these groups, it is imperative that stricter phytosanitary measures to manage the risks associated with them are applied. FIA recommends that the presence of any live arthropod pest from the groups outlined in the PRA should result in mandatory fumigation. An ALOP of greater than 10% should result in failure of the consignment. These measures would also ensure that any arthropods already present in Australia could not have their invasiveness boosted by increased propagule pressure or by the arrival of new strains or biotypes, and any 'new' arthropods (whether new arrivals or simply misidentified), new diseases or new parasites similarly cannot enter. Had these sorts of processes been applied sooner, species such as the gall midge *Contarinia jongi* (Kolesik, 2017), which is thought to be native to South America and from where it has likely been introduced to other countries by the international flower trade, would not have established itself in Australia and caused substantial damage to Alstroemeriaceae buds in SA and Queensland in 2013 and 2015, respectively (Kolesik 2018). Having not been known to feed on plants from Alstroemeriaceae in their native South America or on cultivated plants from this family anywhere in the world prior to this infestation, this is a timely reminder that the cut flower pathway is constantly evolving and any form of complacency may have drastic consequences. It should also be noted that just because a species is already present in a country, does not necessarily mean that continued introduction of the species is without consequence (Saccaggi et al. 2016). For example, genetic diversity in invasive insects is often higher than expected and increases over time when introductions occur again and again (Garnas et al (2016).

#### **5. There is not enough confidence that arthropod pests are being identified adequately to elicit an appropriate response**

The PRA documents a large number of interceptions of live arthropod pests at the border, but there are several occasions where only a small proportion of interceptions could be identified to genus or species level (e.g. only 466 of the 1074 individual interceptions of the order Coleoptera between December 2019 and January 2020 were identified to genus or species level). As noted by Saverimuttu (2014), when cut flower commodities land in Australia and the boxes are inspected there is very little time available to adequately assesses the level of pest or pathogen infestation and apply the appropriate corrective action, leading to a potentially inconclusive or questionable outcome. This is in part due to the perishable nature of the consignments but is also due to the lengthy process of pest species identification (due to the lack of technology to aid this process such as identification tools, taxonomic keys and PCR techniques, and a lack of taxonomic knowledge), and pest species corrective action (which depends on the status of the detected pest (or pathogen), the level and extent of infestation, and its impact on the economy and the environment if the consignment is allowed untreated) (Savrimuttu, 2014). Previous analysis of interceptions of Coleoptera, Hemiptera, Lepidoptera and Diptera at the Australian border has indicated poor detection and/or identification as rendering the system largely ineffective as an early warning for a large proportion of incursions (Caley et al 2015). The system failures are thought to be due to organisms arriving via pathways that are not subject to border inspection, or as a result of low inspection sensitivity, or that the species discovered are not reliably identified, recorded and reported. It could be argued that this historical analysis is repeating itself in the current PRA data, and the FIA is concerned that the NPPO systems approach may be partly responsible. With high rates of non-compliance still occurring, it appears that the off-shore certification process is not robust and as such, exporting countries are breaching Goods Determination that requires their cut flower consignments arrive free of pests. Furthermore, with very few biological and taxonomic studies

being undertaken in African countries with respect to insect pest populations (Lee et al 2017), there is the added dynamic of insufficient information being available on the insect populations of countries such as Kenya who have been shown in the PRA to have the highest non-compliance, and whose trade volumes have increased enormously. If the true frequency of introduction is unknown, the proportion of arthropods intercepted by border biosecurity cannot be determined accurately (Caley et al. 2015).

## **6. Impacts of volumes of imports on Australian flower growers**

FIA supports trade between countries and understands that year-round consumer demand requires the import of some cut flower species to satisfy that demand (e.g. for events florists, Valentine's Day, Mother's Day etc), but the rate of imports is at a level which is becoming detrimental to Australia's own floricultural industries. The Inspector-General of Biosecurity (2015) notes the economic impact on local flower production from the growing cut flower trade. DAWE claims to 'work to strengthen and protect our agriculture...for today and into the future'. FIA would encourage DAWE to consider the impact that a threefold increase in cut flower imports is having towards achieving this aim of strengthening and protecting Australia's agriculture. Indeed, the impact on Australian flower growers has been felt heavily over the past decade, particularly in rose cultivation, with up to 90% of rose growers alone being forced out of production (Andrew Lee, Tamar Valley Roses, pers. comm.). In addition, there is anecdotal evidence within the floristry industry that many imported flowers are of poor quality, with reports of poor vase life and rotting buds, which impacts the credibility of the flower industry overall. FIA would welcome some discussion on the sustainability of the current high volume of imports (notwithstanding COVID-19 impacts) and whether DAWE will consider additional regulation or capping of import volumes in order to protect, strengthen and support the Australian flower industry.

## **7. Country of origin labelling**

Whilst outside of the scope of the PRA process, the FIA would like to see a mandatory 'country of origin' labelling requirement for cut flowers and foliage. This would provide transparency within the Australian cut flower industry and support Australian florists and consumers to make more informed purchasing decisions.

## **8. Other species to be considered**

*Thaumatotibia leucotreta* - although already listed in the PRA, it should be noted that adults of the African fruit moth are known to nestle in rose buds from Kenya and Tanzania, and can survive cold storage. The moth has been detected in the greenhouses of dutch bell pepper growers (Hortidaily 2019). Adult stages only respond to deltamethrin treatment – alternative treatments will only kill larvae (Freshplaza, 2013). *Ralstonia solanacearum* – this is a cluster of related bacterial pathogens that cause systemic, often lethal wilt diseases of flowers and vegetables, and which have occurred in greenhouse culture settings (Norman et al. 2018). In 2015 there was an outbreak of a *Ralstonia* disease in hybrid tea roses in greenhouses in the Netherlands, and occasional outbreaks continue in northern European rose production. Symptoms on roses include stunting, leaf wilting and yellowing, and whole plant death as well as browning of vascular tissue. However, this rose strain also forms symptomless infections. Alarmingly, Norman et al. (2018) state that if imported cut roses containing the disease were discarded near a water source, entire waterways could become infected because it

can spread via water. Because of the proven ability of *Ralstonia* to form latent infections, it might inadvertently arrive in plant material such as cut roses into Australia from sources including Kenya and South America.

## 9. Final comments

Over 20 years ago, the importation of cut flowers and foliage into Australia was declared as a route of entry which ‘...represents the greatest opportunity for quarantine failures for Australia’ (Australian Academy of Science, 1996). Whilst FIA appreciates the positive improvements made to our biosecurity systems over this time period in relation to the trade of cut flowers, it is alarming that, even with the advent of both offshore and onshore measures to manage pest incursions, several of the concerns raised over 20 years ago are still relevant today. For example, cut flowers continue to be subject to a less rigorous screening process than imports of other plant materials. The sampling level remains low. Inspection methods continue to be non-destructive, so pests could easily be overlooked. Phytosanitary certificates remain untrustworthy, particularly from our African trading partners. Fumigation continues to rely heavily on methyl bromide, an ozone depleting, toxic substance which pest species can evolve resistance to and which has been banned in many other countries. In concurrence with the recommendations put forward by the Australian Academy of Science (1996), FIA again demands that satisfactory and effective protocols should be present and applied within every step of our biosecurity system.

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