Summary of Public Consultation on Spray drift policy

Contents

Consultation overview

Public consultation of the APVMA's proposed approach to spray drift management was open from 18 December 2017 to 30 March 2018.

A total of 26 responses were received. Of these, 19 responses were from industry associations, 3 from registrants, 3 from government organisations and 1 from a consultant. A link to all submissions except those that indicated that they did not wish for their submission to be publically available is given below.

Aerial Application Association of Australia Ltd

Alison MacGregor

Apple & Pear Australia Ltd

Australian Forest Products Association

Australian Nut Industry Council

Australian Vignerons

Biosecurity SA (PIRSA)

Citrus Australia Ltd

Cotton Australia

Croplife Australia

Grain Growers Limited

Grain Producers Australia

Grains Research & Development Corporation

National Farmers' Federation

National Working Party on Pesticide Applications

Nursery and Garden Industry Australia

Nursery and Garden Industry Queensland

Poppy Growers Tasmania

South Australian Wine Industry Association Incorporated

The Voice of Horticulture

Victorian Farmers Federation

Wine Grape Council of South Australia

Summary of submissions and responses

Overall there was support for the proposal, including the intent and purpose of the approach. However a number of specific concerns were raised which required consideration. The consultation listed seven specific topics which the submissions should address.

1) Methodology used to determine regulatory acceptable levels (RAL's).
2) Standard scenarios and deposition curves that define realistic worst case situations and are used to generate on-label spray drift buffers.
3) Spray drift data guidelines to support the generation of custom deposition curves.
4) On label spray drift instructions.
5) Spray drift risk assessment tool.
6) Spray drift management tool that allows chemical users to refine these realistic worst-case risk assessments based on their own circumstances and recalculate buffer zone distances accordingly.
7) Interim measures prior to an interactive web based tool being available (stage 2) and legislative requirements to enable off-label spray drift conditions set by the tool to be enforced.

This summary is organised according to these topics. Major concerns for each of these topics that require further consideration are summarised below with a summary of all areas of concern listed in the Appendix.

1) Methodology used to determine regulatory acceptable levels (RAL's)

Sixteen submissions commented on this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 1 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	**APVMA Comment**
RALs and vegetative area buffers do not take into account the risk of spray drift impacting on sensitive agricultural crops (e.g. orchards, vineyards, foliage crops).	The RALs for protection of vegetative areas are made on the basis of terrestrial habitat survival, not on the basis of zero damage and/or yield loss in agricultural crops or landscaped gardens. In general the RALs are protective of 95% of the vegetative population, consistent with current methodology. If specific sensitive areas were to be added, it may increase buffer distances which may limit other potential uses for the product. Often information to enable a RAL to be determined for a specific crop of concern is not available.
The definition of bystander areas as "locations where it is reasonably likely that 'bystanders' will be exposed to residues deposited on the ground from spray drift on a regular basis" is insufficient to address the human health spray	Due to the limitation of tools, it is not possible to reliably estimate exposure through direct contact with the spray cloud and use instructions therefore prohibit any use, which

drift issues where the exposure is from the air, not the ground.	causes a bystander to be contacted by the spray cloud as defined in the glossary.

2) Standard scenarios and deposition curves that define realistic worst case situations and are used to generate on-label spray drift buffers

Twelve submissions commented on this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 2 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	APVMA Comment
Ground boom deposit curves should not be implemented till after revision by NWPPA.	Ground boom deposit curves in consultation were based on a previous report by the NWPPA. Following consultation, additional data was sourced and the previous data was reanalysed. Ground deposit curves have been updated as per the NWPPA revision.
Basic Drift Values' generated from field trials conducted in Germany in the 1990's are not relevant to Australian conditions in 2018.	There is currently no predictive model for vertical sprayers and in the absence of such a model it is necessary to rely on field data. While it is agreed that the German field data does not include equipment and techniques currently used in Australia, it represents a more extensive and scientifically robust analysis than current standard curves used by APVMA. Applicants and industry can generate and supply custom deposition curves to support additional uses.

3) Spray drift data guidelines to support the generation of custom deposition curves

Seven submissions commented on this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 3 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	APVMA Comment
Small industries seeking to apply for custom deposition curves for recognition of drift reducing practices will find under these guidelines the level of information and R&D required is far too significant and will be beyond their financial resources.	The SDMT contains a much broader range of options than currently available and reduces the need for additional custom curves. The custom curves can be made available across industries where appropriate to avoid each individual industry having to generate their own data. The APVMA must be satisfied that the safety and trade statutory criteria are met as defined in the Agvet Code. All trials to support the safe use of a product need to meet regulatory acceptable standards.

4) On-label spray drift instructions

Eighteen submissions commented on this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 4 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	APVMA Comment
Label instructions should be flexible enough to apply at both proposed stages 1 and 2.	Noted, however reference to a tool that is currently not available cannot be included on labels.
APVMA should work with registrants, industry and the States/Territories on a means of addressing the significant number of legacy labels that have very poor statements.	A priority process will be applied.
Labels are getting longer and more complicated. Many users may overlook the fine print, including DO NOT statements.	The proposed instructions will in most instances reduce the amount of information on the label and will be presented in a standard format to aid understanding and compliance of label instructions.
In this technical and digital age, there must be a better way of making all the necessary and essential information available in a better form than relying on hard copy labels alone.	This is beyond the scope of the spray drift proposal.

5) Spray drift risk assessment tool

Seven submissions commented on this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 5 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	APVMA Comment
The SDRAT should be provided to all industry stakeholders that require access including chemical registrants, spray equipment and controller manufactures and software providers.	The SDRAT will be publically available.

6) Spray drift management tool that allows chemical users to refine these realistic worst-case risk assessments based on their own circumstances and recalculate buffer zone distances accordingly

Twenty submissions commented on this topic. There was very strong support for a spray drift management tool. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 6 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	APVMA Comment
The delay in making the SDMT available for use by chemical users and how long does APVMA expect that it will take to develop and activate a 'permanent web based tool'.	The need for state control of use legislation to accommodate label instructions/tools that are extra-label (ie not on the chemical product container) means that the APVMA is currently

	unable to give a timeline for availability of an interactive SDMT that can be used by chemical applicators. The APVMA will continue to work with states and industry on stage 2 of this proposal when the legislative framework allows its use.
APVMA tools need to work with and complement existing array of tools.	The APVMA will work with industry to ensure any tools will complement existing tools.
Availability of RAL's for industry to use in the tool.	The policy will initially apply to new chemistries and chemical reviews. In these cases the RALs will be available through Public Release Summaries (PRS) and chemical review reports.
Training of all users will need to be included for successful implementation. The SDMT needs to be integrated into revised spray application programs delivered by commercial training providers, industry and the chemical manufacturers.	The APVMA is working with industry to ensure consistent messaging in relation to spray drift and training.
The APVMA and industry need to work together to develop this tool. A joint investment model has been suggested.	This will be investigated in Stage 2.

7) Interim measures prior to an interactive web based tool being available (stage 2) and legislative requirements to enable off-label spray drift conditions set by the tool to be enforced.

Thirteen submissions commented on to this topic. Major areas of concern and APVMA responses are included in the following table. Please see Appendix 7 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	**APVMA Comment**
The APVMA issue a standard 'drift management permit' for every product registration assessed under the Approach prior to implementation of the SDMT, which would potentially include all variables relevant to the label such as different wind speeds, deeper water bodies, higher boom and/or aircraft heights, lower application rates where included on the approved label, more coarse nozzles etc. APVMA to work with CropLife to determine a suitable format.	The APVMA will work with CropLife on a standard drift management permit when a proposal is bought forward.
APVMA potentially could be overwhelmed by applications for permits, which would come at a substantial cost to industry.	Initially the policy will apply to new chemistries and chemical reviews and permits relating to these uses would be limited. In order for permits for custom deposition curves to be effective, a product needs to have an assessment to establish relevant RALs and have buffer zones on approved labels.

8) Other comments

Other major areas of concern and APVMA responses are included in the following table. Please see Appendix 1 for more details on the submissions and APVMA responses on this topic.

Major areas of concern in submissions	**APVMA Comment**
The proposal should be accompanied by a strong extension campaign to assist chemical applicators in understanding changed requirements in respect to label conditions and drift reduction technologies.	The APVMA will continue to work with industry and states and territories to ensure consistent messaging in extension campaigns related to spray drift management and understanding of label instructions.
Flexible forward thinking is required to accommodate future technologies. The traditional approach to chemical labelling is no longer the most effective method of delivering best practice stewardship outcomes.	The APVMA will continue to collaborate with state authorities to ensure the approach to chemical labelling is flexible to meet future requirement while still meeting legislative requirements.
The Approach is not intended to be applied retrospectively to existing products. Products containing novel active constituents may have larger buffer zones applied than existing products registered for the same use patterns. This could stifle the introduction of new, innovative crop protection products into the Australian market, and lead to overuse of older products and contribute to agricultural chemical resistance.	While the approach will initially be applied to new chemistries and chemical reviews, it will also be used for all new applications where spray drift assessment will be required. The policy will be extended to legacy products where time and resources permit on a priority basis.
APVMA should commit to and schedule a periodic review of the spray drift management approach.	The APVMA will periodically review the policy

Appendix

Appendix 1. Methodology used to determine regulatory acceptable levels (RALs)

Submission	APVMA Comment
RALs and vegetative area buffers do not take into account the risk of spray drift impacting on sensitive agricultural crops (e.g. orchards, vineyards, foliage crops). This would include impact on organic certification and trade risk associated with exceeding MRL on crops impacted by spray drift.	The RALs for protection of vegetative areas are made on the basis of terrestrial habitat survival, not on the basis of zero damage and/or yield loss in agricultural crops or landscaped gardens. In general the RALs are protective of 95% of the vegetative population, consistent with current methodology. If specific sensitive areas were to be added, it may increase buffer distances which may limit other potential uses for the product. Often information to enable a RAL to be determined for a specific crop of concern is not available. This aspect will require further discussion and could be incorporated into stage 2.
The definition of bystander areas as "locations where it is reasonably likely that 'bystanders' will be exposed to residues deposited on the ground from spray drift on a regular basis" is insufficient to address the human health spray drift issues where the exposure is from the air, not the ground. It is likely this methodology could result in much smaller buffer zones than are necessary to avoid unacceptable impact to human health from exposure to airborne spray. This would cause significant issues for regulators if a chemical user is complying with an insufficient mandatory buffer zone and unacceptable harm to human health occurs. This proposed approach will not provide users with guidance on suggested downwind buffer zones to bystander areas (i.e. the distance at which a spray cloud is no longer likely to present a risk to bystanders through air movement as opposed to residues on their lawn). It is acknowledged that this guidance would not be a guarantee and any harm reported by a downwind bystander would need to be investigated to minimise the likelihood of a repeat event of spraying in unsuitable conditions.	Due to the limitation of tools, it is not possible to reliably estimate exposure through direct contact with the spray cloud and use instructions therefore prohibit any use, which causes a bystander to be contacted by the spray cloud as defined in the glossary.
The SDRAM should more clearly articulate how the APVMA calculates the RAL from the formulation endpoint for products containing more than one active constituent. It is unclear whether, in situations where there is a formulation endpoint, the RAL will be converted into an active endpoint based on the active content, as per the current Environmental Risk Assessment (e.g. if an endpoint for an WG containing 50 g a.i./kg (i.e. 5% w/w) is 200 mg/L, the corresponding active endpoint will be 10 mg a.i./L).	The SDRAM provides a summary of the main methodology associated with the establishment or RALs for the main spray drift risk areas. Further details may be found in the relevant risk area guidelines. Assessment will be as per the current Environment risk assessment guidelines.

It is not clear why single-nozzle application equipment is exempt from the spray drift risk assessment.	There is no reliable model for hand held sprayers. The area and sprayed amount of chemical when spraying by hand tends to be small and hence risks from spray drift is typically lower than from boom sprayers. In cases where particular hazards have been identified for consideration with hand held sprayer the deposit could be estimated by a single nozzle boom in AGDISP.
Why is the default water body set to 15 cm? This value (15 cm) is very conservative and not represent of the broader Australian environment.	This depth has traditionally been used to be representative of typical worst case scenarios for dryland areas in Australia. Water depth can be refined in higher tier assessments.
The APVMAs proposed 'mandatory buffers' which could see industry denied access to new products simply because of their property sizes and locations.	This is no different to current approach. In many aerial and vertical sprayer cases the buffers will be lower than obtained using standard deposit curves and hence products that may not be approved under current guidelines may be approved.
Applying a worst-case scenario on the label is in the interest of the public, and in the long run, in the interest of the industry as well. However, there is no need to go unrealistically far with this approach, for example, using the 90th percentile as standard. Without the proposed new scenario (i.e. the risk assessment tool) to allow the user to refine the no-spray zone based on the risk to the particular situation to be sprayed, the current worst-case buffer areas would be considered as unfair to the grower and as an overprotection of the off-targets.	A 90^{th} percentile is commonly recognised as a regulatory standard.

Appendix 2. Standard scenarios and deposition curves

Submission	APVMA Comment
Proposed ground (boom) sprayer deposition curve are not supported without the refinements proposed by the National Working Party on Pesticide Applications (NWPPA) Technical Working Group.	Ground (boom) sprayer deposition curves have been changed based on recommendations from the NWPPA.
There is no currently validated predictive model for vertical sprayers' to establish deposition curves. The use of 'Basic Drift Values' generated from field trials conducted in Germany in the 1990's and not relevant to Australian conditions in 2018.	There is currently no predictive model for vertical sprayers and in the absence of such a model it is necessary to rely on field data. While it is agreed that the German field data does not include equipment and techniques currently used in Australia, it represents a more extensive and scientifically robust analysis than current standard curves used by APVMA. The current standard deposition curve are based on curves in AgDrift which are based on field trials by the US SDTF. The use of the German field data typically results in smaller buffers than those obtained from use of the AgDrift curves. Applicants and industry can generate and supply custom deposition curves to support additional uses.
As the scenarios do not accurately represent many spraying practices it will likely result in large numbers of permit applications or submissions of 'custom' deposition curves in Stage 2, creating regulatory bottlenecks.	It may result in a larger number of permit applications for situations that can be modelled (in interim SDMT) however it is likely that the cost and time to generate custom curves would limit the number of permit application relating to custom curves.
Question if 'worst case" should be the guiding principle as described in the manual due to the very unique nature on the cropping systems used in smaller agricultural industries.	The label needs to be based around realistic worst case scenarios, however there are option for alternative scenarios to be evaluated during application assessments.
The standard scenarios do not reflect the realistic worst case scenarios. They are based on data points collected in a limited set of trials that measure drift in conditions within 3 and 20 km/hr. Worst case scenarios are when wind speeds suddenly and unpredictably change in direction and speed during a spraying event, and cause unintended drift. Wind in any particular day can gust.	The standard scenarios are not the worst case that could be encountered. The scenarios are based on good practice being followed.

Appendix 3. Spray drift data guidelines to support the generation of custom deposition curves

Submission	APVMA Comment
The proposed model is not optimal. Due to the long buffers that are being derived from the model, it is likely need that frequently custom deposition data will be required. A more efficient system should be established. An accreditation system in Australia for wind tunnels has been suggested.	The APVMA is not in a position to accredit wind tunnels, however would support industries if they wish to pursue this approach.
There is clearly potential to generate a set of custom spray deposition curves based on the use of industry best practice DRTs. An agreed set of best practice DRT examples can be incorporated as case studies in training material and also potentially as reference use cases by registrants on label.	Noted.
The data used to generate the curves must encompass a broader range of conditions than are proposed in the trial protocols. Data needs to be generated that shows: • drift under extreme weather conditions • drift of different formulations and tank mixtures. • relevance to commercial. • the effects of machinery configurations • sprayer technology that reflects the most advances in • drift at greater heights than the minimum heights proposed. • the benefits to drift reduction of observing any of the actions included in the UK LERAP system.	Noted. In submitting data for custom cures, applicants are able to submit data that encompasses these conditions.
The guidelines to support generation of custom deposition curves are prescriptive and appear to preclude any data from small trials by industry being used. Most horticultural industries seeking to apply for custom deposition curves for recognition of drift reducing practices will find under these guidelines the level of information and R&D required is far too significant and will be beyond their financial resources.	The SDMT contains a much broader range of options than currently available and reduces the need for additional custom curves. The custom curves can be made available across industries where appropriate to avoid each individual industry having to generate their own data. The APVMA must be satisfied that the safety and trade statutory criteria are met as defined in the Agvet Code. All trials to support the safe use of a product need to meet regulatory acceptable standards.
Generation of custom deposition curves is one of the main suggestions in the AVPMA consultation paper. This topic is discussed in relative brevity and vaguely in the MANUAL. The AVPMA needs to work with industry to identify a range of DRT and how they can be recognised to customize deposition curves that have the best possible fit to field data. This may need several trials, and possibly involve the use of already existing overseas data.	The APVMA is willing to work with industry and applicants to identify DRT and data requirement. Existing international data can be submitted as part of applications.

Appendix 4. On label spray drift instructions

Submission	APVMA Comment
Label instructions should be flexible enough to apply at both proposed stages 1 and 2, including inclusion of reference to future on-line tools.	Noted and this is the intent
APVMA should work with registrants, industry and the States/Territories on a means of addressing the significant number of legacy labels that have very poor statements. APVMA work with registrants, industry and the States/Territories on improving labels through the pursuit of simpler approaches evident on labels overseas that are based on science and current sound practice and which are far simpler for users to understand e.g. pictograms.	Legacy labels will be addressed on a risk and priority basis.
Growers have indicated that the main information they seek from labels for spray application is droplet size, application rate, recommended water rate, application pressure and withholding period.	The use of standard label format according to the labelling guidelines will make this information easier to find.
Basing label instructions for use on a risk management approach might reasonable for at least the Stage 1 implementation. However, given that this is not so different to the current situation, we are not confident that this will reduce the occurrence of spray drift incidents.	APVMA are working with industry to ensure better understanding of spray drift and label requirement to help reduce the occurrence of spray drift incidents.
We would like to see a more universal term used for vertical sprayers and a term that is easily recognised and understood by growers eg. ground sprayers, or revert back to 'orchard and vineyard' sprayers.	Vertical sprayers has been selected as a more universal term for any spray situation where spray is not directed horizontally towards the ground. The term orchard and vineyard sprayer does not capture all these uses.
We believe that the definition of 'landscaped garden' needs to be either embodied in the manual or in fact a more generic term be used.	This is included in the glossary.
While we understand the importance of the label for the correct application instructions, we are most concerned that the additional information proposed for buffer zones, both mandatory and advisory, will make the label even more complicated and difficult to interpret.	In most cases the proposed label is shorter than in the current system. Following consultation all buffers are now mandatory.
We believe that in this technical and digital age, there must be a better way of making all the necessary and essential information available in a better form. We believe APVMA needs to investigate other options for making the buffer zone information available.	This is a broader issues with label and will be considered beyond the scope of this project.
Given the apparent lack of understanding of atmospheric conditions that result in surface inversions among product users, It is recommended extending the proposed label statement to: 'DO NOT apply during surface temperature inversion conditions at the application site. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.	This has been modified as proposed.

Flexible forward thinking is required to accommodate future technologies. The traditional approach to chemical labelling is no longer the most effective method of delivering best practice stewardship outcomes. Relying on hard copy labels alone is not the most appropriate response. Labels should incorporate reference to online resources which can be accessed by all available DRT options and effectively link in with buffer zone calculator tools. Regulators should recognise that the historical approach to chemical labels is not appropriate today for delivering best practice stewardship outcomes.	This is a broader issues with label and will be considered beyond the scope of this project.
The almost infinite number of DRT and spray equipment options available to producers and the future need for electronic labels and cloud based systems to support semi-autonomous and autonomous spray control systems requires a 21st century approach to on-label spray drift buffer zone instructions. A 19th century hard copy label approach for all potential DRT solutions is not a practical way forward for industry. While labels could have 'worst case' buffer zone, suggested DRT solutions as recommended by the chemical registrant should also be included. Labels will require reference to web based, cloud reference solutions for all available DRT options with access to producer spray drift buffer zone calculator tools held by the APVMA.	The label would have the reasonable worst case buffer zone and there is the option for applicants to add their recommended DRTs.
More supportive of the label specifying 'Advisory buffer zones' due to the lack of flexibility allowing a grower to employ sound drift mitigation measures under "Mandatory buffer zones" likely to be specified on a label.	Following consultation all buffers are now mandatory.
The addition of "downwind" to all references of drift buffers ensuring it is clear to all users that spray drift buffers apply only downwind	Label statements and definitions indicate that buffers for spray drift are always downwind.
The proposal includes for two rates, a maximum and lower, for ground sprays but there is no lower rate consideration for aerial buffers. Consistency is achieved by adding the lower rate to aerial	This can be included if applicants require.
The potential need for much greater water volumes to provide adequate coverage - Leading to the inability to tank mix products where one requires MEDIUM spray quality for efficacy purposes and the other requires an EXTREMELY COARSE spray quality to meet drift guidelines.	This is also a difficulty with the current system.
While there is emphasis on avoidance of livestock, environmental and bystander damage it would be of benefit to place greater emphasis on avoidance of inflicting economic loss on other agricultural crops via spray drift.	APVMA's legislative requirement is to consider the safety, efficacy and trade of agricultural products.
Provisions to deliver label consistency and simplification are supported to improve the ability of chemical users to interpret application requirements accurately and efficiently. These proposed changes should be accompanied by a program to streamline label conditions for like-products to ensure alignment with risk, and reassessment of the approach for record keeping and compliance.	This is out of scope of the current consultation.

Consideration of online tools to support complex labels will enable flexibility for rapidly responding to emerging issues, adjustment for new technologies or scientific advancement, and incentives for adoption of drift reduction technologies. This level of customisation may also assist in focusing the attention of chemical applicators to the label instructions that are relevant to their application needs and may aid in 'future-proofing' the labelling system whereby electronic labels may be required to drive automation.	This will be considered in Stage 2.
Further clarification around the proposed label terminology is recommended: a. Definition of the 'target' when setting boom height or release height, and whether this relates to the group, crop canopy, or weed height; and b. Clarification for the level of rigour and assessment for 'experiential' risk management strategies to provide confidence that requirements referring to subjective assessment or ambiguous terminology can sufficiently mitigate risk and can be reviewed or addressed if they are deemed insufficient. c. It should be specified where windspeed label requirements for risk mitigation relate only to daytime conditions i.e. DO NOT apply unless the wind speed is between 3 and 20 kilometers per hour at the application site during the time of application. Additional windspeed label requirements should be included for night time conditions to mitigate risk associated with movement under laminar flow, associated with stable atmospheric conditions overnight. d. Provisions to ensure that chemical applicators can reliably determine nearby sensitive areas, particularly where this process is not automated. This is of particular concern for sensitive pollination areas in situations where operators are unwilling or unable to share the location of managed hives. e. Provisions should be considered to ensure users can reliably identify nearby sensitive crops to comply where the label states DO NOT cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production outside the application site from spray drift. f. Provisions should be considered to ensure that chemical users can identify whether surface temperature inversion conditions are present to comply where the label states DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. g. Clarification regarding the term 'observed' and clarification for what constitutes 'observing' a drift reduction technology (DRT) in terms of enforceability where the label states, DO NOT apply from boom unless DRTs are observed.	Definition of target has been expanded. Height of spray is now defined as height above the target canopy which can refer to the crop, weeds or any other vegetation within the target area, whichever is the highest. Additional information has been included on surface temperature inversions.
The proposed label wording makes it clear that you must not cause damage to downwind crops, but provides no guidance to the appropriate buffer to protect downwind crops.	Buffer relates to vegetative areas and not specific crops.

DO NOT cause contamination of plant or livestock commodities outside the application site from spray drift.	
Clarity and revision is required regarding proposed wording (section 5.1.1 General instructions) for spray drift instructions: DO NOT cause an unacceptable impact to … DO NOT apply unless the wind speed is … DO NOT apply if there are surface temperature inversion conditions ...	These terms are defined in the glossary.
Labels are getting longer and more complicated. Many users may overlook the fine print, including DO NOT statements. This includes obvious statements such as DO NOT allow bystanders to get in contact, DO NOT cause unacceptable impact .., DO NOT cause contamination … While all of these statements may be legally necessary, the label looks uninviting. The APVMA may have a higher success rate of growers regularly referring back to labels if there was an outstanding executive summary for Spray Drift Restraints. Example given in submission.	The proposed label changes will, in most cases, reduce label statements from that which is currently proposed.
Is the APVMA going to adopt the ASABE S572.1 onto all current and new labels without significant cost to industry in updating labels? The S572 and S572.1 have significant droplet size differences, Teejet have re-classified their product, how can applicators compare other brands if they align to other standards? Is there an updated BCPC or equivalent? These issues will come up in legal argument especially with current labels specifying S572.	The main change from ASAE S572 and ASAE S572.1 is the addition of the Ultra Coarse and Extremely Fine categories. Difference in the other categories are due to a surfactant-water mixture being used, however it is noted that this was also a requirement in S572, but it may not have always been applied. It is further noted that AS572.2 is now released however it should not significantly influence classification. ISO 25358 was introduced in July 2018. The boundary nozzles and pressures are the same as the other standards up to VC. For VC, XC and UC the reference pressure is lower than the other standards. This would make classification for these larger size categories more conservative. For example if a nozzle is classified as VC according to ISO 23538 it will always be at least VC in the ASAES572.1 standard, but there can be cases where a VC nozzle in S572.1 will be C in ISO 23538. Since it is more conservative than current buffers based on S572.1, the use of ISO 23538 would be acceptable. Different nozzle standards are used because no undisputed international standard currently exists. Droplet size categories are currently based on ASAE S572.1 and categories from other standards will not be used unless

	sufficient information is provided with an application to enable custom droplet size distributions to be established or APVMA recognises the standard.
We are curious at the introduction of the phrase 'experienced chemical user'. If an experience chemical user can conduct a local area risk assessment of vegetation, why can they not make similar risk assessments for aquatic areas and hives of bees. If APVMA is using the above assumptions on aquatic areas and bees as the basis for implementing mandatory buffer zones, then these assumptions are not acceptable to industry and should be removed.	Reference to experienced chemical user has been removed.

Appendix 5. Spray drift risk assessment tool (SDRAT)

Submission	APVMA Comment
The spray drift risk assessment tool is very complex. Farm chemical users would currently have the necessary skills to be able to use such a complex tool correctly as proposed for Stage 2. Furthermore, a web-based tool may not be readily accessible to many users in regional areas due to internet connectivity issues, in addition to the real risk of users not having the capability and skills to properly use such a tool and correctly interpret its output. We consider that training of all users will need to be included for successful implementation, and neither the mechanisms nor costs appear to have been considered in developing the proposal.	It is intended that the SDRAT would primarily be used by APVMA in undertaking assessment and it is not anticipated that farm chemical users will need access to this tool. The comments regarding training and access to the tool are relevant to the SDMT in stage 2 and will be the subject of further consultation between industry and APVMA.
This tool should be provided to all industry stakeholders that require access including chemical registrants, spray equipment and controller manufactures and software providers. The terrorism and military risks around access and use of these models should however be carefully managed by the APVMA as this technology is a controlled item under the Defence Trade Controls Act.	The SDRAT will be publically available. APVMA will ensure during further discussion in relation to stage 2 that there is consideration of the Defence Trade Controls Act.
The spray drift risk assessment tool must continue to be revised and improved, because its relevance will always be limited by the simplicity of the model and the data included in the model.	The tool will be reviewed as appropriate.
The Local Environmental Risk Assessments for Pesticides (LERAP) is a potential alternative approach that has been adopted in the UK and parts of Europe for protection of waterways from agrichemical contamination. Under the LERAP system a user develops a property based spray plan that allows for reductions in the worst case label buffer zones by implementing different drift risk reduction tools (droplet sizes, sprayer drift risk profile, chemical application rate). The attraction of the LERAP approach is that it would allow relatively simple agrichemical label based requirements to be interpreted on the basis of local and relevant risk assessments.	Noted.
As the SDRAT does not adequately address vertical sprayers, tree and vine crops have no way to apply a risk assessment approach to potentially reduce buffer zones from the worst-case scenarios on the label. This is not workable for the sector.	While the SDRAT may not adequately address all vertical sprayers, the best available data has been used in the absence of a model and Australian data. This can be updated as better information becomes available.

Appendix 6. Spray drift management tool (SDMT)

Submission	APVMA Comment
SDMT could be a useful tool for farmers and agronomist, but further work is required to understand how this will be developed and rolled out.	An extension program will be required and further discussion.
APVMA tools need to work with and complement existing array of tools.	Noted.
We recognise that it may be possible for those users that have invested in new technology and the relevant appropriate training may be able to use the tool to refine buffer zones to their own specific circumstances without significantly increasing the risk of a spray drift. However, we cannot support the notion that this same approach can be extended to all users without stringent enforcement mechanisms being in place to ensure that such risk assessments and the subsequent use of chemicals are conducted, implemented, recorded and monitored appropriately. The potential additional costs of compliance do not appear to have been considered in the proposal.	The label statements will be for all users and there is no greater compliance burden than with current label. It would be users choice if they wish to use DRT.
We are most disappointed and frustrated at the delay in making the SDMT available for use by chemical users. How long does APVMA expect that it will take to develop and activate a 'permanent web based tool'?	The need for state control of use legislation to accommodate label instructions/tools that are extra-label (ie not on the chemical product container) means that the APVMA is currently unable to give a timeline for availability of an interactive SDMT that can be used by chemical applications. The APVMA will continue to work with states and industry on stage 2 of this proposal when the legislative framework allows its use.
If the SDMT was used as an effective 'training, educational and instructional tool' then the need for State Agency sign-off should not be required. This would allow chemical users the opportunity use the tool while the bureaucratic aspects of the legality of a new buffer, as prepared using the model, can be worked through.	Noted.
One specific area of drift minimisation that has real potential for industry is more wind breaks, either grown or constructed. "The work in relation to 'vegetative and artificial spray drift barriers' should be fast tracked as a matter of priority and urgency. The use of such barriers have become and will become very important and valuable in the peri-urban areas and the urban/rural interface."	This has been included in current draft. Further experimental work is required to validate this approach.
The commercial in-confidence 'custom deposition curves' may have a restricted use, however information should not be restricted in such a way that a chemical user, using the applicable product, cannot access the deposition curves to use with the SDMT. It is urgently requested that APVMA RAL's are provided in order that industry can accurately reflect APVMA assessments.	It is intended that custom curves could be provided to other uses should the applicant give permission. This policy will initially apply to new chemistries and chemical reviews. In most cases these will have public release

	summaries or consultation documentation, which identifies these RALs.
SDMT users seeking to lower buffer zones will need to be savvy – the prototype system will require internet access, log in and more and will be open to all. Such a scenario will realistically only be pursued by the largest of chemical interests, putting boutique farming at the bottom of the APVMA registration food chain.	It is likely that would be required, but this is increasingly becoming a requirements for other reasons and access to technology is becoming increasingly common. It would be available to all.
The SDMT is not an advisory system. It will be the law as at the time of the regulatory decision on each product (p49). The Agvet Code is the cooperative scheme between all states that sees mirror laws at state and commonwealth level.	Noted.
In the final spray drift model, it is seen as critical that up to six products can be included in a tank mix.	The consultation file is only an interim solution with up to 2 products. Mixes with more than 2 products could be built into future versions.
In addition to the variables currently covered by the SDMT, the forestry industry proposes to include as a minimum: release height to include all heights by metre intervals from 3m to 40m; slope to include 5-degree intervals from 0 to 20 degrees; canopy height to be included as a variable up to 43m in 1 metre intervals; and relative humidity. This will enable forestry operations to carry out realistic and accurate risk assessments, better reflecting real practice.	This would require considerable time to run all these extra scenarios, but can be added as required.
Section 3.3 and 6.2 are relatively clear on when Adjusted RAL's for combination products and what Mandatory tank mixes apply. However, in section 7.1.1 the language is changed, becoming less clear and a little confusing, with reference to "An exception arises when there is determined to be a synergistic effect of the tank –mix….". It is proposed that the same language used in the other sections of the document is maintained, for example "An exception arises only when a tank mix is used where the tank mix is on the registered label as mandatory". This would make interpretation clearer and more user friendly, especially given that there is no attempt in the document to explain what synergistic means and when it would be determined to apply.	Has been changed to be more consistent.
Regarding the addition of custom deposition curves, it is not explicit how these apply to generic products. Under section 7.3.1 of the manual, the third dot point states "Third parties (e.g…..industry representative groups….) can apply to the APVMA for technical assessment" which "may either be product specific or applicable to any product." It is unclear how a custom deposition curve may apply to many products. Logic suggests that a deposition curve that is acceptable for a product should be acceptable to all similar formulations, e.g. glyphosate 360.	Custom curves could be available to all products. However it is noted that in order for custom curves to be of any benefit, buffers zones need to have been established and on the existing product label.
The lack of certainty around the implementation of the SDMT is of significant concern, as many of the refinement options discussed in the Spray Drift Risk Assessment Manual (SDRAM)	Applicants have the option in stage 1 to include DRTs on product labels or permits

to mitigate the unnecessarily substantial ground buffer zones are dependent on the adoption of the SDMT for users	
Producer access to spray drift risk assessment tools is essential for the successful outcomes of reducing adverse spray drift events in Australia. There is a need for improved in-field producer access to these tools on both smart phone and tablet devices as well as being integrated into spray system controllers.	This will be considered in stage 2
For models such as spray drift reduction technology (DRT) models, these foundational approved models should ideally be held by the APVMA and made available to registrants, spray management solution providers and industry producers via the web as a reference for best practice use.	AGDISP is held by the US Forestry Service, but is freely available to all.
Collaboration - To support flexibility and avoid duplication and wasted resources, it is critical APVMA collaborates effectively with other organisations and key stakeholders operating in this space. APVMA must be open to joint investment models with industry and the commercial sector to enhance the options for delivery of APVMA approved systems. One example is the need for co-investment to ensure the integration of tools into digital business management systems.	Noted. This will be considered in stage 2.
Models should not only be used as look-up tools. Into the future where automation and digital agriculture technologies will be significant enablers, models will be delivered as on-line tools that can interact with spray controllers and future electronic label guidelines.	The system could be expanded to meet future demands.
There is significant opportunity for industry investment through RDCs and commercial providers in delivering integrated spray drift risk assessment tool solutions. The APVMA should be open to joint investment models with industry and the commercial sector to deliver APVMA approved systems that integrate these tools and label options into improved digital business decision tools. It is the commercial sector that will ultimately deliver the most effective gateway for producer use of these tools. This approach is foundational to the recently completed Accelerating precision agriculture to decision agriculture project2, which was financially supported by all 15 RDCs with additional financial support by the Australian Government.	This will be considered in Stage 2.
APVMA provide more information on what would be considered effective drift reducing technologies from a tree and vine crop perspective. Need to add more options eg recirculating sprayers, more than one nozzle type on sprayer, air volume etc.	Specific DRT for tree and vine crops can be taken into account, but as there is currently no model that can account for some of these DRT field data or custom curves would be required.
Increasing spray droplet spectrum from MEDIUM to COURSE or to EXTRA COURSE may result in reduced efficacy for some product classes. Need a disclaimer on SDMT for coarser than labelled spray quality. The SDMT allows users to select a spray quality that may be courser	This will be considered during evaluation for a product or permit.

than the labelled recommendation. This may lead to reduced product efficacy and failed weed/pest/disease control. It is suggested that the SDMT returns a suitable warning that a products efficacy may be negatively impacted. There remains a question as to the potential liability if there is resulting product failure.	
The following DRTs are recommended for initial assessment: • myBMP; the cotton industry's best management practice program which includes specific drift mitigation activities including identification of sensitive areas, and pesticide application plans. • The CottonMap and BeeConnected online platforms for identification of nearby sensitive areas. • Shielded, hooded, or low-release sprayers • Real-time assessment and alert tools for changing weather conditions and spray quality risks • Planted vegetative spray drift buffers"	The use of all these resources and DRTs are supported and will be assessed where appropriate
Further clarification is sought regarding the following aspects of the spray drift risk assessment tool: a. Whether the methodology sufficiently accounts for the field-observed upper limits for boom release height, where release heights may exceed 1.2m. b. The rights of producers in instances where the spray drift risk assessment tool determines a buffer that differs from label requirements, thus resulting in product application 'contrary' to the label. c. How planted native vegetation buffers will be assessed as both a vegetation area or a DRT. d. How the spray drift management tool will be reliably accessible in regional, rural, or remote areas."	a. Methodology can account for higher release heights, however the higher height increase the risk of spray drift and lower release heights should be encouraged wherever possible. b. This will be considered in stage 2. c. If vegetation is specifically planted for spray drift mitigation it would be regarded as a DRT, however other conservation benefits of the vegetation should be considered by spray applicators. d. This will be considered in Stage 2.
Growers must be given more credit for their existing active management of spray drift and increased support via the new tools to enhance these efforts. For instance, it is not uncommon for growers to spray only when the wind will blow any excess spray droplets further into the property rather than over their boundary. Nationally we have a strong Best Practice ethos already supported by good science so help us build on this capacity by making sure your tool development meets our needs.	Noted, the label should support good practice.
In a legal dispute, would it be considered acceptable that an operator recalculated buffer zone distances according to their own perceptions of risk.	APVMA cannot comment on implications of off label use.
Advisory buffer zones - Experience can lead to complacency and underestimate risk associated with spraying conditions Buffer zones and sensitive areas.	Noted.
There is no consideration in the current standard scenarios/deposition curves of risk associated with varying climatic conditions.	Wind speed, temperature and relative humidity can be taken into account but atmospheric conditions cannot.

"The variables that can be manipulated in SDMT, to generate adjusted buffer zones, are presumably limited to the parameters that were included in the Spray Drift Task Force trials or the trials to generate the German drift values. There are additional variables that can be considered without requiring new data (for example vegetation buffers and trade considerations). Recent advances in spraying practices and technology also make it reasonable to expect that the models would include a broader range of options that affect drift risk. This proposal does not adequately recognise the role of natural and artificial shelterbelts as DRTs, which must be addressed prior to implementation. The incorporated SDMT example does not take into account overhead netting which is commonplace in the apple and pear industry, but instead relies on vertical windbreak barriers. Determining the optical porosity of the barrier is likely to impose a significant and unreasonable complications for a chemical user. Sprayer engineering and operational setup can provide effective drift reduction. Notable examples are shrouded sprayers (with or without recapture) for vine and small tree crops and effective use of air assistance (eg air bags on booms or the direction of air assistance from orchard sprayers). Methods to rate and incorporate drift reduction features on sprayers will be important to the effective use of the proposed APVMA buffer zone management system."	The curves in the SDMT are generated through AGDISP and do not include the German or SDTF data. The shelterbelt model is based on the best available data and will give growers an option for their use. A series of figures could be developed to easily allow estimation of optical porosity.
Chemical rates in vertical spraying The amount of chemical used has obviously a lot to do with the amount that can drift. In Australia, horticultural rates are given in ml or g/100L. This has the advantage that the applicator is using the exact concentration the manufacturer wants used to achieve efficacy. However, the grower still needs to achieve the right dose on the leaf, which requires the correct amount of water. The label is vague and specifies to use the dilute volume, to spray to the point of run-off. The more water put out the more chemical used, and the more potential drift. This is one of the greyest areas in the industry. These new suggested dilute rates are better than the existing rates. However, this approach is not workable.	The influence of concentration and water volume can be considered and changed in both SDRAT and SDMT.
Optical Sprayers From reading the APVMA publication SDRAM I am concerned that it would appear that all risk is not being considered Optical dilution rates of 2,4-D amine are up to 6 litre / 100 Litres with an application rate of 100 litres / ha If we take a boom spray using 2,4-D Amine at 100 litre per ha with a rate of 0.7L/ha I am concerned the concentration factor is not being considered The nozzles on an optical sprayer are coarse border line medium, if you consider 10% driftable	Noted. The higher concentrations/application rates that may be used with optical sprayers can be taken into account in the SDMT. Optical sprayer need to follow all other label instructions, including any restrictions about spraying in inversion conditions.

fines I would argue that the result is very similar even if you only spray 10% of the paddock. My concern is that the technology is being promoted as having very low risk. What happens if this is taken out of context and operated on a 24 hr shift with an autonomous tractor, will the model handle this driving through 2 high risk periods and a possible continuous inversion?	
It will be important that the APVMA online tool is compatible or complementary to existing products already being utilised by producers. These existing products are valuable DRT, and should be part of the broader approach to managing spray drift.	Noted.

Appendix 7. Interim measures and legislative requirements to enable off-label spray drift conditions set by the tool to be enforced

Submission	APVMA Comment
Timing of the introduction of the New Approach. It is imperative any tools that can lead to improved spray application are made available as soon as possible. There is an urgent need to get the tools, particularly those leading to improved spray application including DRTs recognised not only for production benefits, but for their environmental and safety benefits. Would like to see an interactive web based tool being available (stage 2) with Federal and State legislative requirements to enable cloud/web based label reference to be available no more than 6 months from APVMA finalisation of the spray drift risk assessment tool.	Stage 2 will be progressed as soon as legislative changes control of uses extra- label instructions are available.
Simply providing a web-based tool is not a reliable indication that it will be accessible or even used correctly. Whilst it may be possible to address this through transitional arrangements from Stage 2 implementation, it may not be the case prior. Therefore, it is difficult to find any justification for allowing an interim measure to enable off-label use during Stage 1 of the proposal.	In the interim there may be increased information with DRT options on the label. Any off label use would need to be supported by a permit.
The interim measures for (Stage 1) of the APVMA's proposed approach to spray drift management are inadequate and will result in additional cost to industry and low adoption. Maintaining the permit system which has been shown to be demonstrably non-functional (i.e. no permits were applied for) will not provide a viable longer-term solution. APVMA potentially could be overwhelmed by applications for permits, which would come at a substantial cost to industry in terms of permit application fee costs, labour and costs to support the applications, and the cost of any additional data required to support them. By spending an excessive amount of time in Stage 1, the practice of label shopping may also be exacerbated. Chemical users may also avoid newer chemistry or products that have been assessed using the new spray drift regulation and will maintain their use of older products with less restrictive labels. Clearly these are potentially perverse outcomes from the implementation of a system designed to improve off target spray drift outcomes.	The interim measure would not imposes additional cost to implement beyond that which currently exists.
The Approach does not address label requirements for products that may be affected by implementation of the SDMT, prior to its availability to end users. Any reference to the acceptability of the SDMT prior to its availability would, presumably, not be permitted. Consideration should be given to minimising the regulatory burden on product registrants who may need to amend existing product labels to include reference to the SDMT, if or when it is implemented.	Reference to SDMT now not included in label instructions.
The APVMA issue a standard 'drift management permit' for every product registration assessed under the Approach prior to implementation of the SDMT, which would potentially	APVMA will work with CropLife to determine if this is feasible when a proposal is received.

include all variables relevant to the label such as different wind speeds, deeper water bodies, higher boom and/or aircraft heights, lower application rates where included on the approved label, more coarse nozzles etc.	
These tools also need to be integrated into revised spray application training programs delivered by commercial training providers, industry and the chemical manufacturers.	Stage 2. Noted but out of scope.
Concerned that outcomes of the spray drift review and consideration of application of this new model in regulatory decisions are not yet in place before the reviews of phenoxy herbicides including 2,4-D have are finalised. It is essential that chemical review regulatory decisions are deferred until full consideration for decision on models submitted are finalised, including the new spray drift and DRT models and tools for use by producers.	The revised approach will be considered as part of the 2,4-D review.
Encouraging registrants of the approximately 50 current product labels affected by previous APVMA spray drift buffer zone assessment to submit a permit application for use of an industry agreed set of prescribed DRTs and resulting revised buffer zones. These permits could then be incorporated onto existing labels by the APVMA as an outcome of the spray drift review process.	Applicants are able to apply for such a permit.
It is critical to introduce the capacity and capability for industry to challenge label based directions with real world experience and systems to manage off-target drift. An inflexible regulatory driven process will not deliver as expected and the APVMA must be conscious of the potential harm these 'modelled' buffer zones could do across the entire Australian plant production sector.	The system is designed to increase flexibility compared to current procedures.
The proposed time delay between stages 1 and 2 of the proposed approach are of considerable concern in respect to creating uncertainty or inflexibility for chemical applicators. It is strongly recommended that robust interim measures are applied to ensure that chemical applicators can practically achieve the buffer zone requirements for in stage 1. Certainty is also required where the proposed approach interacts with the permit system, or where existing chemistries are currently under review.	The interim measure allow for additional information related to DRTs to be on product to ensure that chemical applicators can practically achieve the buffer zone requirements.
"A web based tool is a great advance on the excel curves that have been previously available from the APMVA. An interim tool that allows users to provide feedback to the APVMA about its relevance and ease of use will certainly help to make the tool better informed, relevant and user friendly. To make the tool useable in the short and long term, consider the audience who will hopefully use it."	In stage 1 it is intended that the tools will be used primarily by the APVMA and registrants. A web based tool would be a great advance and APVMA will consult to ensure relevance and ease of use should development be continued.
Concerned that the worst-case scenarios will be set on the label, the development of the web-based SDRAT will be delayed and that the APVMA will not have sufficient resources to handle interim permits. In this event, industry will be stuck with the worst-case scenario for a	Registrants can apply for DRTs on their product label so users are not only stuck with worst case scenario.

while. This is less relevant to vertical sprayers, as the SDRAT cannot accommodate them at the moment anyhow.	

Appendix 8. Other comments

Submission	APVMA Comment
Need to look products that control weeds in urban areas in isolation to broadacre situations as it becomes too restrictive and does not fit in with the operational footprint of urban streets. Large Mandatory Spray zones are not practical.	The proposed approach allows for consideration of urban areas with reduced application area.
Removal of the bias against aerial application and transparency of approval processes.	Modelling parameter have all been standardised for both ground and aerial application apart from obvious difference such as spraying speed, release height and spray platform to remove any bias against a particular application method.
Maintenance of the principles established in the Operational Notice for Spray Drift Management eg recognition of AAAA nozzle calculator and assessment of spray quality at Dv0.1 rather than all three assessment points (Dv0.1, 0.5, 0.9) required by ASAE s572 standard.	Industry and manufacturer's calculator and tool or data may still be used to demonstrate compliance with required droplet spectra. It is noted that Dv0.1 is the most appropriate droplet spectra descriptor in relation to spray drift.
The variation in label statements also provides uncertainty around tank mixes. It is possible that a product may be used in tank mix with another product for which there is no mandatory statement on either of the products used, but for alternative products or even 'use cases', a Mandatory statement does exist.	Combination toxicity is considered for mandatory tank mixes.
In Section 3.3 there appears to be a typo or error in equation 11 which changes from LC50 to EC50, this should be corrected for clarity. There also seems to be a minor omission in section 3.3. While it is clear how the additive formula works for a combination product, it is not stated how the RAL expressed as a fraction of field applied is to be calculated for a mandatory tank mix of 2 products. It is assumed that the same formula is used and when the step to calculate the RAL as a fraction of field applied rate is calculated pi becomes: pi = g ac A Ha-1 / (g ac A Ha-1 + g ac B Ha-1) This should be described, perhaps in section 3.3 as an addition to Equation 11.	This has been corrected.
Concerned that the Approach is not intended to be applied retrospectively to existing products, perpetuating a substantial failing of the current spray drift risk assessment process. Existing products registered using the current, outdated spray drift risk assessment approach could retain different buffer zones than a new product with the same active constituent. Similarly, products containing novel active constituents may have larger buffer zones applied than existing products registered for the same use patterns. This could stifle the introduction of new, innovative crop protection products into the Australian market, and lead to overuse of older products in certain scenarios, thereby reducing the intended impact of the Approach and contributing to agricultural chemical resistance.	While the approach will initially be applied to new chemistries and chemical reviews, it will also be used for all new applications where spray drift assessment will be required. The policy will be extended to legacy products on a priority and risk basis.

Concerned that the proposed data guidelines state that compatibility of non-compulsory tank mixes is a matter for industry stewardship. While the compatibility of non-compulsory tank mixes is the responsibility of the product registrant, the use of the term "industry stewardship" incorrectly implies that there is a formal industry stewardship program for management of non-compulsory tank mixes. It is proposed that the text is amended to more accurately reflect that the responsibility for management of compatibility of non-compulsory tank mixes resides with registrants.	This has been modified.
Concerned that the proposed approach to managing non-compulsory tank mixes with DRT formulations may lead to overestimation of risk in some cases or unnecessarily restricting the label in others. In the scenario where a product with DRT properties is commonly mixed with another product without losing its inherent DRT properties, it may be inappropriately conservative to impose the longer buffer zone associated with the tank mix partner. To encourage innovation with regard to reducing spray drift risk, it is proposed that the APVMA evaluate the compatibility of non-compulsory tank mixes with DRT formulations from a spray drift perspective at the manufacturer's request.	The APVMA will evaluate the compatibility of non-compulsory tank mixes with DRT formulations from a spray drift perspective at the manufacturer's request as part of an application for registration/variation of a product or permit.
It is recommended that the APVMA commit to and schedule a periodic review of the spray drift management approach. This would comprise of targeted consultation with key stakeholders to ensure the incorporation of new relevant data when available, and the rectification of identified issues, minor adjustments and/or errors on a consistent basis.	Noted, this is to be regularly reviewed.
Without retrospective implementation of the proposed risk assessment measures, the intended impact of the Approach is limited, and may have negative impacts on product choice by users, as well as restrict the introduction of new crop protection product use patterns into the Australian market.	The policy will be extended to legacy products on a priority and risk basis.
The SDRAM contains a number of technical errors. For example, in example 6 for Case Study 1 of the SDMT (page 60), the boom height should be 1m rather than 0.6m and the vegetation area buffer should be 36m rather than 22m. The guidance on how the APVMA calculates combined toxicity using the concentration addition model (pages 20 to 21) incorrectly considers that one active is "diluting" the other in the multicomponent formulation and provides an underestimate of combined toxicity. Presumably, this is carried over from the previous spray drift risk assessment approach, and as such, requires review by the APVMA on a broader level.	These errors have been corrected and consideration of combined toxicity will be consider on a broader level by APVMA.
It is recommended that consideration be given to the following definitions: • 'Application site' and 'target' (with respect to boom or release height, noting some of the case studies currently use 'ground' instead of target) should to be added for improved clarity; • The reference to 'experienced chemical users' in the glossary definition of 'advisory buffer	These changes have been made in the revised draft.

zone' (and elsewhere in the SDRAM) should be removed as it is a non-specific term that could cause confusion. 'Advisory buffer zone' should also be updated to refer to 'vegetation areas' instead of just 'native vegetation' to ensure that 'landscaped gardens', 'crops', etc. are captured. Alternatively, 'advisory buffer zones' could be defined as those that are established to be protective of 'vegetation areas' or 'livestock areas' and may be reduced by implementing additional risk management strategies; • 'Agricultural crop' should be expanded to include 'fuel' and 'medicinal' production (i.e. any terrestrial plant species grown commercially for food, fibre, fuel or medicinal production etc.) to account for crops such as biofuels and poppies; and • 'Boom sprayer' should be modified to remove the word 'directly' to better account for some technologies such as Controlled Droplet Application.	
Proposed programs to change agricultural practices need to have a high probability of success and deliver benefits to the implementer and/or avoid costs and problems. This will only be achieved if the proposed changes are practical, ie capable of implementation, and supported by an effective widespread and sustained education program. To achieve behavioural change, there need to be clear benefits and motivations for change. For example, the new program needs to be simple to implement and offer benefits for spray users – ie spray drift is a waste of chemicals for the users. Secondly it needs to be supported by respected leaders of best practice so that the new practice becomes industry standard. Additional motivators are not causing damage to other primary producers and the wider community. To ensure compliance to new standards after such an education program, there should be effective punitive action for non-compliance.	Out of scope for this consultation
The glossary defines agricultural crops as any terrestrial plant species grown commercially for food or fibre production'. This fails to note "foliage" as a component in the definition.	This will be added.
Under Section 2.2 (page 11) "Some products do not require a spray drift risk assessment when the proposed product label limits their use to: Use indoors (e.g. protected growing situations, etc" This is an incredibly broad criteria for a use pattern and there is no definition in the Glossary. APVMA must provide more detail around this use pattern to ensure there is no ambiguity around exemptions.	Definition to be reviewed.
Restrictive labelling of 'mandatory buffers' is not supported due to the lack of flexibility this offers growers who can mitigate the risks.	Following consultation with state control of use, all buffers are now mandatory.
Predictive modelling of common pesticide application techniques and equipment does not appear to be available for nursery production which will mean inappropriate data will be used reflecting another cropping system driving decisions impacting our growers.	Predictive modelling is not currently available for these uses but can be considered if they become available.

The potential impact the implementation of buffer zones will have on the ability of government and industry when managing emergency plant pest (EPP) incursions and mitigating impacts on industry, the environment and community.	This will be considered in any application for registration or permit application.
Do not believe that an experienced operator lacks the ability to assess risk relevant to pollinators, bystander areas and/or natural aquatic areas over and above what growers currently do now.	Reference to experienced users now removed.
It is strongly recommended that introduction of the proposed approach (stages 1 and 2) is accompanied by a strong extension campaign to assist chemical applicators in understanding changed requirements in respect to label conditions and drift reduction technologies. Requirements associated with the proposed approach should also be considered for integration in nationally recognised training packages that deliver outcomes associated with responsible chemical use.	Noted. This could be aligned to initiatives of industry groups.
• The statement "DO NOT allow bystanders to come into contact with the spray cloud." duplicates existing environmental health legislation in States and Territories without adding any value (as buffer zones cannot be set due to a lack of modelling capability). It is proposed that this statement be removed from the policy until such time as the purpose adds value by having a buffer zone able to be established. • Some definitions should to be added to the glossary for clarity (and should be discussed with CropLife and NWPPA): o "application site' o "target" (with respect to boom or release height, noting some of the case studies currently use "ground" instead of target) • Given the ongoing issues with a lack of understanding of inversions, could the label statement be extended to add some specific background: "DO NOT apply during surface temperature inversion conditions at the application site. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise. • The definition of 'advisory buffer zone' in the glossary (and elsewhere in the SDRAM) should be reviewed to remove the reference to 'experienced chemical users' as this would not be specific enough to mean anything and could cause confusion. It also needs to be updated to refer to 'vegetation area' instead of just 'native vegetation' (so 'landscaped gardens', 'crops', etc. are also captured). A suggested alternative is: o 'Advisory buffer zones' are those that are established to be protective of 'vegetation areas' or 'livestock area' and may be reduced by implementing additional risk management strategies. • The 'Agricultural crop' definition should be expanded to include 'fuel', 'medicinal' and 'other	These suggested revision have been consider and manual updated as appropriate.

agricultural purposes' production (e,g. "any terrestrial plant species grown commercially for the production of food, fibre, fuel, medicinal or for other agricultural purposes…") to account for biofuels, poppies, green manure, cover crops, etc. • The 'Boom sprayer' definition should be modified to remove the word 'directly' (e.g. "that applies spray directly downward from a ground-based horizontal boom…") to better account for some technologies such as CDA, etc.	
Currently the cost of developing the necessary documentation to meet regulatory requirements for minor use permits is prohibitive for many of these niche markets, and manufacturing companies are limited in the financial returns that may be gained by accessing niche markets in Australia. The minor use system needs to be publicly funded to address the current market failure.	This is beyond the scope of the current proposal.
Industry stakeholders and government agencies are continuing to work together on an integrated strategy to reduce incidence of chemical spray drift. In order to minimize incidents of spray drift, it is critical that farmers work together at a local, regional and industry level, and in doing so, ensure they can retain access to the full range of farm chemical tools.	Noted.