



# AERIAL APPLICATION ASSOCIATION OF AUSTRALIA LTD.

ABN 13 002 501 886 • ACN 002 501 886



29 March 2019

## **AAAA Submission to the Review of the Ag Vet Legislation**

### **Regulation of drones**

AAAA is appalled at the lack of policy and regulatory action to appropriately address the regulation of drones / UAS and their application of agricultural chemicals.

There has been little effort by the Commonwealth or the States/Territories to actively engage with AAAA or the two drone associations on this important issue. At a recent meeting of the States/Territories to consider this issue, neither AAAA nor the drone associations were invited to provide information or otherwise consulted.

AAAA was so concerned with the lack of understanding of the issues involved that it prepared and distributed to State/Territory chemical control of use regulators a policy document outlining the issues and calling for a level playing field in regulation.

A copy of that AAAA Policy is included below at APPENDIX 2.

Unless drones are appropriately regulated – including establishing baseline competency requirements, chemical safety standards and other relevant systems already demanded of piloted aerial application – it is likely that damage will be caused, placing direct, unwarranted and avoidable pressure on agricultural chemicals – and regulators.

The Commonwealth should play a leadership role and urgently convene a taskforce that includes AAAA, the two drone associations, CASA, the APVMA and the States and Territory chemical control of use regulators.

The aim should be to develop a coherent and nationally consistent framework of competence, systems, licencing and regulation to ensure drones have to meet the same standards as all aerial application and have the same responsibilities for due diligence.

## **APVMA Risk Management and Consistency**

Embedding a simpler risk assessment approach for aerial application that is based on consultation with relevant sectors to ensure APVMA staff can access expertise is more critical than ever.

Aerial application is still being treated by APVMA as a higher risk application – despite all evidence and performance data to the contrary available from State/Territory regulators.

There is a considerable disconnect between industry needs and APVMA processes where the outcome is registrants not pursuing aerial application registrations at the same time as they apply for ground registrations due to the known time delays this will cause – entirely due to APVMA processes for aerial assessments that cause delays that may extend over several cropping seasons.

As there is no formal mechanism requiring APVMA to seek end-user expertise or advice regarding probable use patterns, APVMA staff are making assumptions that are incorrect and not presentative of industry practice.

These often non-transparent assumptions then skew assessments and are very difficult to correct after APVMA makes a decision.

A simple mandatory requirement to consult – perhaps through the long-suggested APVMA aerial application working group including AAAA – would remove much of the inconsistency and lack of understanding of use displayed in APVMA assessments and outcomes.

Introduction of a mandatory 'level playing field' between aerial and ground assessments, including the introduction of standardised templates including agreed application methods and standards is essential to remove the variation between individual assessors within APVMA which often depends on their familiarity or lack of it with aerial application issues.

The policy aims should be to remove the current outcome whereby aerial approval is seldom applied for in the first year of a product as registrants are keenly aware that this will result in APVMA delays in assessing the overall registration.

The longer-term outcome is less aerial application available on label despite superior performance in terms of reduced drift management incidents when a product is applied by air rather than ground. This outcome is verifiable by checking with State government control of use agencies, and by reviewing recent chemical approvals that have not included aerial because of this long-standing issue.

AAAA attempted to assist APVMA in this regard by offering to co-fund an independent review of APVMA approval processes for aerial, and while this received in-principle support from the CEO of APVMA, it has not been taken forward by APVMA staff.

The most recent example of these problems is the suspension of 24D products, which failed to consider – due to the lack of knowledge of industry use patterns and the lack of formalised channels of consultation between APVMA and chemical users

– current industry use patterns on pasture, cane and forestry applications. This resulted in a subsequent correction required through an additional permit.

### **Permit regulations review**

The 24D suspension experience again highlights the shortcomings of the current regulatory framework around permits.

AAAA strongly supports a reform of the current 3 categories of permits allowed (4 if you count APVMA's ability to issue a permit in its own name – as per the current 24D permits).

One way forward would be to consider an amendment to the *Ag Vet Chemical Code Regulations 1995, Part 6-Permits, Clause 57(2)*.

This current list of 3 permit types could simply be extended by a new permit type called 'Better Practice Permit' or similar and potentially an additional permit category for aerial application as an interim measure.

This could also be a mechanism to enable the earlier implementation of the proposed Phase 2 of the new APVMA drift management system.

The details of such a reform are included in the recent AAAA submission to APVMA, which is included below at APPENDIX 1.

### **Lack of APVMA Consultation Systems**

Better consultation and coordination with the States/ Territories and ag chemical peak user groups such as AAAA would improve a nationally consistent approach to issues – ie a policy leadership role that could sit with APVMA or perhaps with the Commonwealth Department of Agriculture.

The lack of a culture of engagement, openness and consultation is clearly still an issue with APVMA as evidenced by AAAA's experience in the complete lack of consultation on 24D suspension up until the making of the suspension.

Once the suspension was gazetted and made public, there was significant engagement – initiated by AAAA – which resulted in the correction of major omissions for agricultural and forestry use by APVMA. This resulted in the issuing of an additional permit to reverse the damage caused by APVMA's lack of consultation.

However, the lack of systematic engagement is not limited to particular chemicals, reviews or assessments.

## **NWPPA and the Proposed New National Drift Management System**

The National Working Party on Pesticide Applications ([www.nwppa.net.au](http://www.nwppa.net.au)), of which AAAA is a member, has been working closely with APVMA over many years to try and gain relatively simple improvements to the APVMA drift management and labelling systems.

Despite the assistance (including significant funding of technical projects to support improvements) and very positive engagement initiated by the NWPPA, it has only relatively recently come to light that APVMA had not been engaging with the States and Territories on how the proposed and accepted new system might actually be implemented by the chemical control of use regulators at the State/Territory level.

This threatens to derail the significant improvements that would be made to industry practice and the capability of industry to vary and comply with labels based on improved in-field assessments of drift management requirements.

APVMA's current approach to label statements based only on worse case scenarios is penalising industry – despite sound and transparent science indicating it is entirely possible and highly desirable to have a more flexible label to empower improved use strategies. There is also strong international precedent for such an approach.

This is clearly acknowledged by APVMA's support of moving to a better system and its engagement with the NWPPA – but the essential work to engage with the States/Territories on this issue is well overdue.

The key ability of APVMA to refer to other documents on the label – thereby simplifying the label and improving industry access to knowledge and sound practice – is a central tenet of the proposed new policy – including the use of an on-line spray drift management tool.

Broadening the definition of 'the label' to allow references on a label to documents, procedures or processes or policy outlined elsewhere – eg on the internet and which are freely available to users – would bring labels into the current century and offer a wide range of additional benefits including:

- Less label clutter / greater readability
- Improved identification of key safety issues
- Better access to additional information and practices
- Matching of buffers to in-field conditions
- Reduction of buffers and risk by use of lower rates
- Likely improved label compliance

This will be a critical improvement and clarification for the urgent introduction of Phase 2 of the APVMA proposed drift management scheme that will permit greater clarity and brevity on labels.

Interestingly, the APVMA already uses and the States/Territories accept off-label references to a range of materials including resistance management strategies, but

their appears to be an issue with the extension of this same principle to proposed off-label references to reduced buffers using an APVMA proposed process.

Without the States and Territories being able to recognise this process through their own legislation – which may require amendment in their own jurisdiction - the proposed new system will not function.

The likelihood of this new system suffering additional delays of several years is high without an urgent and concerted effort by APVMA to engage with the States and Territories to deliver the new system.

It appears there is a consensus – including the NWPPA, the APVMA and at least some States and Territories – that the proposed new system represents a generational opportunity for improvement in the national agricultural chemical management system.

Given that level of support, it is disappointing that it will still be years before industry is likely to realise the benefits in the field without a strong Commonwealth focus on bringing the new system to life in the shorter term.

AAAA's most recent submission to APVMA on the importance of moving forward on both Phase 1 and Phase 2 of the proposed new system is included below at APPENDIX 1.

---

## **Appendices**

1. AAAA Submission to APVMA on introduction of Phase 1 of the proposed new drift management policy
  2. AAAA Policy on Drones
-

## Appendix 1

Recent AAAA Submission to APVMA



# AERIAL APPLICATION ASSOCIATION OF AUSTRALIA LTD.

ABN 13 002 501 886 • ACN 002 501 886



8 March 2019

By email to: [enquiries@apvma.gov.au](mailto:enquiries@apvma.gov.au)

Australian Pesticides and Veterinary Medicines Authority  
PO Box 6182  
Kingston ACT 2604

### **AAAA Submission to APVMA public consultation –**

#### **Supplemental comments on the APVMA's approach to spray drift management – Stage 1**

AAAA refers APVMA to its submission of 27 March 2018. In addition, AAAA adds the following key areas of concern and the need for APVMA attention to a range of issues that have emerged through experience with the suspension of 2,4-D products and the creation of new permits for its ongoing use.

#### **Staged Approach**

AAAA remains frustrated that APVMA is committed to a staged approach which will see little to no benefits accrue from the adoption of better practices such as modelling of buffers based on lower rates, better spray quality or other assessments

related to on-site assessments that are more accurate than the worse-case scenario modelling used on labels.

This is a major flaw in the APVMA strategy and one that is made even less sustainable by the recent experience of developing a response (including additional amending permits) to APVMA's unconsulted suspension notice of all 2,4-D products.

### **Better Consultation Systems and formal structures**

The 2,4-D suspension experience clearly demonstrated the value to both APVMA and industry of better consultation through improved systemic consultation processes that are still not in place between APVMA and industry.

APVMA should immediately establish a chemical users consultative group to improve the current lack of formal consultative mechanisms, with the NWPPA continuing to provide a facilitative mechanism for annual, science-based discussions.

### **Access to Proven Practice**

The 2,4-D suspension experience demonstrated the need for APVMA to be able to deliver labels and buffers that are based on realistic models of 'standard' use rather than the compounding effect of worse-case assumption (and safety buffer) on top of worse-case assumption.

For example, even though the maximum label rate available on one popular registration of 2,4-D is 3.5 litres per hectare, there are few circumstances where more than 2 litres/ha are used and for most uses the rate falls to 1.7 litres/ha or significantly less.

The ability to recognise this in the APVMA permits issued to support the 2,4-D suspension simply underscores what is wrong with the current system in its inflexibility for users, the significant negative impact of modelling that only uses worse-case assumptions at maximum label rates and the lack of a system that can be effectively administered under State/Territory control of use legislation.

In particular, APVMA should give immediate consideration to how to bring forward the adoption of Stage 2 concurrent with Stage 1 so that benefits can be realised – especially through the use of lower than maximum label rates and consequently shorter buffers.

AAAA is especially concerned with likely delays that may arise to any adoption of Stage 2 and subsequent initiatives as APVMA does not appear to have closely engaged with the States and Territories who may struggle – according to them - to recognise any references to materials that are not directly on the physical label.

In the medium to longer term, AAAA sees this as a fundamental problem for the States and Territories to solve. The States/Territories must upgrade their approach to the recognition of technology, information storage and retrieval and the way

chemical users now rely on a wide range of electronic data to support their compliance and decision making.

However, APVMA does have a methodology available to it to bring forward Stage 2 and at the same time facilitate the State/Territory recognition of better practices through a reformed permit system as an interim measure.

### **Immediate Reform of the Permit System**

One way forward would be to consider an amendment to the *Ag Vet Chemical Code Regulations 1995, Part 6-Permits, Clause 57(2)*. This current list of 3 permit types could simply be extended by a new permit type called 'Better Practice Permit' or similar and potentially an additional permit category for aerial application as an interim measure.

This, in combination with a clear APVMA system, could enable a user meeting certain prerequisites (such as training or industry accreditation) to use a prescribed approach to drift assessment (e.g. AgDISP modelling) to arrive at smaller buffers (for example) based on good science and a more accurate in-field assessment of conditions.

Having printed the output of the approved model or system, the user could then access the APVMA website and print out a 'standard' permit for better practice that provides a legal underpinning, relevant to all jurisdictions, for actions that are better than available from the actual label which is, as always, based on worst case scenarios, such as highest rate.

Alternatively, the APVMA proposed SDM Tool could come with the standard permit attached – again for printing and record keeping. However, the timeline for availability of this tool remains unclear.

Further simplifications could also be considered where one set-up or model run could be used for all future applications with the same parameters.

The various State/Territory control-of-use requirements for accurate assessments of conditions, record keeping etc, would all then come into play as usual, with the print-outs as above forming part of the system of record keeping required for each application - and again, as usual, being transparent for audit or investigations.

The innovation of a 'better practice' permit category would be a relatively straight forward improvement that would address the concerns of the States/Territories, while delivering to industry a strong incentive for the adoption of better practice spraying.



The need for a review of the current structure of the permit system and the policy directing it is also clear from a broader aerial application access perspective.

AAAA has been advised on many occasions by APVMA that the permit system is unable to cater suitably for aerial application because of the policy limitations of the existing permit categories.

These policy limitations on existing permit categories - being 'minor use', 'research' and 'emergency use' - seem to be quite contradictory when potential aerial uses are compared to the way ground uses are routinely approved. It may be that a review of the policy surrounding the permits may identify additional greater flexibility for APVMA than previously imagined.

Importantly, an initiative such as an aerial application permit would address the long-standing problem of products that may not have aerial on label, and because they are now 'generic', have no registrant support likely in terms of further research or development that would allow a label change.

### **Revised aircraft deposit curves, particularly in relation to release height**

AAAA has already provided advice to APVMA regarding aircraft spray height as part of the 2,4-D suspension process and development of subsequent permits.

There is a need to take a more nuanced approach, given optimum aircraft spray release height is variable and determined by, amongst other things, the wingspan of the aircraft and its operation in ground effect – normally at a height that is around 25% of the wingspan of the aircraft.

Clearly, the size of the aircraft will have an impact on the optimum spray release height, with increased downwash from larger aircraft offsetting the higher release height.

Given the training on this issue through the AAAA's Spraysafe accreditation and the accountability of all aerial applicators through mandatory licencing by States/Territories, the removal of height requirements on label would not be an unmitigated risk, especially when combined with the modelling already done for approvals that includes a representative spray height that is already close to the 25% of wingspan figure.

Consequently, APVMA should consider removing the current height restrictions on label (generally set at 3 metres) and replacing them with a recommendation to operate the aircraft at a spray height that represents approximately 25% of the wingspan (or rotorspan) of the aircraft – or simply leave this issue to the training and competence underpinned by Spraysafe and licencing.

An alternative approach – adopted for the 2,4-D Permit – is to provide varying spray heights (for example 3 and 5 metres), however, this creates an even more complex, duplicative label/permit and is not AAAA's preferred model.

**Mandatory verses advisory buffer zones.**

As AAAA has previously indicated, the use of advisory statements on labels, far from simplifying compliance, actually increases compliance risk for applicators as Courts (and some jurisdictions from experience) are likely to rely on the label as setting a standard of due diligence regardless of whether a statement is deemed advisory or mandatory by APVMA.

Consequently, applicators are likely be held to the commonly available standard on label – advisory or mandatory.

A superior solution is for the APVMA to move as quickly as possible to Stage 2 of the proposed reforms to enable applicators to have a clear head of power and a scientifically rigorous method for reducing mandatory maximum buffers that relate to use of the maximum label rate and other maximum parameters.



## Appendix 2

# AAAA Policy Position UAS/RPAS/Drones

The concept of a 'level playing field' is critical to AAAA. There is simply no good reason why UAS operations should not be subject to similar licencing and competence requirements as piloted aircraft.

UAS pesticide licencing could work in a simple manner to attain what is largely a level playing field between all aerial applicators.

### 1. UAS Pilot licencing:

- a) In keeping with the approach used for piloted aircraft, there are two broad elements of competence that need to be covered – competence in flying (CASA licencing) and competence in chemical application (EPA / State control of use agency licencing).
- b) Consequently, AAAA sees it as appropriate that if a pilot holds CASA certification/licencing for UAS operations, and then attains AAAA Spraysafe accreditation (ie the only chemical training available for aerial application – and already accepted by every State/Territory), that the State control of use regulator should be able to issue them with a licence.
- c) The level of competence for aerial application pilots will simply be higher than UAS operators because aerial application pilots are required to hold a Commercial Pilots Licence and an Aerial Application Rating and a Class 1 medical (although that is changing to permit Class 2 medicals) and are bound by a range of CASA regs that may contribute to improved safety (fatigue management etc). These 'additional' qualifications and competencies contain significant additional elements of risk management, human factors and application-specific training such as meteorology. This is an area where there is a capability or training gap that warrants additional discussion.
- d) The State control of use regulator may consider placing conditions on the licence to ensure equal regulatory coverage with piloted aircraft by specific mention of use of risk management, spray drift management, record keeping etc.
- e) In particular, AAAA believes that aerial application of pesticides should only be allowed to be conducted by a UAS operator when working under the direct control of a business as below.

## **2. UAS Business licencing:**

- a) In keeping with the approach used for piloted aircraft (except WA), UAS application should not be permitted without licencing coverage of the business overseeing the pilot and application.
- b) Consequently, AAAA sees it as appropriate that if a business holds CASA certification/licencing for UAS operations, then the State control of use regulator can use that as a basis for licencing if other conditions of licencing are met, including evidence that the business has in place relevant systems to manage the risks associated with aerial application.

This could be achieved in a number of ways:

- Negotiation of State by State licencing conditions covering systems etc and clarifying the application of existing regs to UAS ops (eg offences, record keeping etc)
- Use of the previously drafted National Operating Standards for Aerial Application developed through the PISC (COAG) process – covering drift management, spray quality and communications systems requirements.
- Use of the AAAA Spraysafe Business accreditation checklist – possibly amended to be more relevant to UAS ops. However, without UAS members, AAAA is not interested in undertaking any additional work that detracts from our focus on members.

## **3. UAS Label Compliance:**

There remains one significant additional gap, however, and that is the ability of UAS operators to provide scientifically valid assessment of their spray quality to ensure what is recommended on label (eg spray quality, water rates, buffers – leading to adequate coverage, efficacy and drift control etc) is able to be delivered in the field.

Piloted aircraft are able to use existing models (eg AgDrift / AgDisp / AAAA Nozzle calculator) that have been developed by the industry over previous decades, along with manufacturers' data and wind-tunnel research outcomes – to accurately predict spray quality in operational settings for existing fixed wing and rotary wing aircraft types. These models are used by APVMA – using 'typical' operating assumptions on aircraft type etc – to establish relevant buffers and spray quality on chemical labels.

These field-verified predictive models – while conservative and only valid to 800 metres - take into account near-wake effects of turbulent airflow on nozzle spray quality and provide confidence to regulators, registrants, operators and pilots that the platform is producing a known spray quality.

The same supporting material is simply not yet available for UAS operations and may require additional research (eg using CPAS at UQ Gatton) to establish whether there is any issue and if there is, the scope of it.

Placing a nozzle directly under a rotor producing a turbulent airflow at significant speed could theoretically lead to secondary shattering of droplets, with a subsequent 'fining' of the spectrum and consequent increase in drift potential. Manufacturer's data for most common ground nozzles is derived from testing with water+surfactant IN STILL AIR. That means it may not be what is happening under a rotor...

If the label says 'COARSE' then we need to be comfortable that the platform is actually producing 'coarse' in the field.

There is also an issue of slow forward speed of some UAS platforms leading to operations conducted lower than translational lift speed. Above translational lift, aircraft vortex sheets unroll and a helicopter performs in similar manner to a fixed wing from the perspective of vortices. Below translational lift, rotary platforms create a vortex ring that does not unroll, or only partially unrolls.

In turn, this could lead to increased entrainment of droplets, potential recirculating of spray, increased release height and possibly more drift. How much drift is the key question that needs answering? UAS lower weight may also come into play to mitigate this effect but this is another unknown. CPAS at the University of Queensland may be able to assist with either expertise or establishing a field trial to remove doubt or identify issues.

There are additional UAS 'hardware' issues that may also need addressing. Issues such as suck-back, check valves and pump line security may be relevant when considering potential failures over a non-target area. Given current requirements for line-of-sight only ops and the potential ability of the UAS to operate only over the target area, this may be mitigated already...

In the longer term and based on additional research, there may be a case for the APVMA to actually undertake additional work in this space, or potentially to have a separate UAS registration process to put data on label, including buffers relevant to UAS ops. It may be the case that the proposed reform of the APVMA buffer system may be flexible enough to address these issues – see current discussion paper due for comments 29 March 2018.

AAAA notes, however, that there appears to be an unconfirmed but pervasive understanding that if a chemical is registered for aerial application then it is registered for UAS application. This may also require formal legal confirmation.

END.