A E R I A L A G R I C U L T U R A L A S S O C I A T I O N O F A U S T R A L I A L T D .

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Submission by the Aerial Agricultural Association of Australia Limited (AAAA) to the Productivity Commission Study into the Regulation of Plastics and Chemicals

Overview

The Aerial Agricultural Association of Australia (AAAA) represents Australia's aerial application pilots and operators.

The Association's key concerns are:

- inconsistency between jurisdictions in chemical control of use regulation
- lack of a national and State commitment to ensuring competency of all chemical applicators is linked to their access to chemicals
- APVMA's proposed approach to requiring a specific mention of aerial application on label which will unfairly limit aerial application's access to chemicals
- a complete lack of transparency and consultation in APVMA approval of chemicals and the accompanying development of label requirements
- the unlevel playing field created between aerial applicators and ground applicators as a result of a lenient approach to ground applicator licencing, training and record keeping
- the lack of a simplified national system of cross-referencing and recognition of licences, qualifications, competencies and accreditations between jurisdictions and between federal Departments
- the lack of regulation for agronomists and related consultants who play an important role in chemical application
- the lack of government funding to improve training and ongoing education of aerial applicators in support of AAAA programs

As well as addressing issues raised in the Commission's discussion paper, AAAA has provided a range of background information as part of this submission.

General Concerns

APVMA Issues

APVMA Lack of Transparency
An ongoing problem with the registration of chemicals by APVMA is the lack of transparency and the opportunity for input from the aerial application sector into specific labels.

While there are clearly commercial confidentiality considerations, the incredible inconsistency in label requirements between chemicals is a major concern to AAAA.

When whole sectors with a significant stake in safe application are not consulted in the registration of individual chemicals, there is a major flaw in the system that is reducing the quality of the outcome.

APVMA should establish, as it has promised to do for some years, a technical working group on aerial application (bound by commercial-in-confidence provisions if necessary) that can assist it with improving label statements on chemicals.

In some specific examples, AAAA has been advised by chemical companies that APVMA has made it very clear to them that a chemical registration or permit without aerial application involved will receive a much speedier treatment and 'easier ride' than one with aerial application included.

This is an unfair discrimination against the aerial application industry for no good safety, environmental or trade reason. The later section in this submission dealing with the 'myth of ground rigs and reduced drift' goes to the heart of the matter.

APVMA Proposed Drift Policy
AAAA hold genuine concern with the position of the APVMA over aerial application and spray drift, and indications that APVMA will require an overt statement on all chemical labels as to whether aerial application is or is not permitted for that chemical.

The key issue should be competency of the applicator ***regardless*** of whether that applicator is using ground, airblast or aerial application.

AAAA has played a very positive role in its relationship with APVMA over a number of years, hosting information days, making aircraft available for demonstrations and meeting regularly with senior APVMA staff and the APVMA Board to ensure they are aware of the practical implications of their regulation.

Unfortunately, the APVMA appears firmly wed to the erroneous assumption that aircraft will cause more drift than ground applications regardless of any other considerations such as the competence of the operator or the set-up of the aircraft.

It is this principle that is underwriting APVMA's position that there should be a distinct requirement for aerial application to be considered a 'higher risk' application warranting greater attention and additional research before label approval.

Any difference between aerial and ground application that can be measured in drift modelling or other work is rapidly overtaken by the greater competency of aerial applicators to make sound application decisions. In other words, the competency of aerial applicators reduces any risk of an adverse effect.

A national approach to linking competence to access to chemicals is both obvious and long overdue, and should be included on label. This should be regardless of whether the application is made by air or ground. To single out aerial for very harsh treatment as the APVMA seems intent on doing is not only unwarranted, but likely to cause significant damage to agriculture for no real environmental outcome.

Without aerial application, widespread rust epidemic control, locust control work and the protection of tall crops such as bananas and cane and irrigated crops such as rice and cotton could not be achieved efficiently.

A critical impact of the APVMA requiring special mention of aerial on label will be that aerial access to generic or off-patent products will rapidly diminish as chemical companies are unlikely to invest money in a product that has little protection of their investment from other companies.

A broader concern is that this reluctance to invest in aerial application may also happen with proprietary products if the APVMA's requirements become unrealistic or impractical.

There is already a disconnect between APVMA's policy makers who insist that all will be required is some modest additional modelling, and the registration/permit area that continually makes significant additional demands of registrants if they want aerial on label.

AAAA is aware of a number of chemicals being refused for aerial application on the grounds that very detailed (and expensive) additional information is required.

APVMA has no transparency for how it might enable continuing access to aerial application, nor has it indicated how it will deal with registrants' concerns over significantly increased information requirements for products under the new APVMA drift policy.

For example, APVMA has not attempted to map out a simplified permit system for products that may be adversely affected by the "aerial specific" label requirements, so that organisations such as AAAA, if necessary, could apply for a permit and develop practical experience and data on the safe application of that product.

This is compounded by the current APVMA practice of not requiring consistency between labels or even within labels. If anything, the effect of the closed APVMA approval process is to ensure inconsistency between labels and within labels. If the product has been found to be safe on one crop in one State, why is it not approved for use on the same crop in another State? For that matter, if a product, is available for use on one type of target, why should it not be available for similar types of targets in similar cropping situations?

This is one area where simplification and streamlining would be a significant improvement on APVMA performance. Inherent in this statement is the knowledge that other State and Federal departments have a significant input into APVMA decisions, and they would also have to be brought into line to improve consistency.

AAAA's position remains that there should be no special requirements for aerial application on label other than the aerial applicator being competent through recognising AAAA's Spraysafe program as all States do.

Proposed Chemical User Accreditation and Restricted Chemical Products

There has been a proposal under discussion for some years by the APVMA to restrict access to certain chemicals to only certain users who meet competency and other requirements.

AAAA has always supported any Government moves to ensure that all applicators, regardless of ground or aerial, contractors or farmers, are trained and competent in the use of the products to which they have access.

AAAA led the way in this regard with the introduction of the Spraysafe training program for pilots in 1985.

AAAA supports the concept of access to some chemicals being restricted, depending on the level of training a person has received and the level of accountability and transparency they are subjected to through State chemical control-of-use regulation.

However, AAAA does not support the suggestion that relevant training, competency and assessment can only be provided through a Registered Training Organisation under the Australian Quality Training Framework.

AAAA believes that as a starting point, all licence holders holding suitable competency (such as all Spraysafe accredited application pilots) should be approved for access to all chemicals, including those that may be included on any APVMA restricted access list.

State Issues

State Control-of-Use Regulation Inconsistency
AAAA is concerned at the lack of relevant and timely reform of regulation of chemicals across jurisdictions.

State inconsistency adds costs to chemical applications through duplication of licencing, differing training requirements, differing record keeping requirements and differing approaches to compliance and education.

For example, despite the Federal/State Product Security and Integrity Committee and various working groups considering the issue since 2001, there is still not an agreed nationally consistent licence regime for the licencing of pilots and businesses engaged in aerial application. Each State still pursues their own licencing regime and charges. Similarly, States have different record keeping and training requirements.

A key issue for AAAA is the ongoing lack of requirement in all States except NSW for mandatory training for all chemical applicators, including ground applicators and farmer applicators.

State by State reform of control of use regulation is disjointed and uncoordinated, with each State adopting a different philosophical approach to the management of chemical application.

The reviews in each jurisdiction take up valuable industry time, result in different compliance regimes and add to confusion and cost for the increasing number of aerial applicators that operate in a number of jurisdictions for good economic reasons.

The Anti-competitive Playing Field
A key economic and competition issue is the unlevel playing field between aerial application and ground application.

Despite State regulators publicly and consistently indicating they receive considerably more complaints and undertake more investigations regarding poor ground application than aerial application, most States continue to require licencing and high training and other standards from aerial application, but no or limited licensing, training or record keeping for most ground applicators.

All ground applicators across Australia should be required to meet mandatory training requirements to at least AQF3 standard, be licensed and be required to keep records of each application.

More information is provided under ‘Competency’ below and in the ‘background’ section of this submission.

Competency and Access to Chemicals

The key issue of safe chemical application is the competency of the applicator ***regardless*** of whether that applicator is using ground, airblast or aerial application.

A droplet doesn't know whether it came from a commercial ground operator's rig, an air blast sprayer, a farmer's ground rig or an aircraft – it simply obeys the laws of physics. Establishing a system that would require aerial and only *some* ground operators to be competent does not seem to be robust or rational in terms of risk reduction. This is currently the case in all States except NSW.

Any difference between aerial and ground application that can be measured in drift modelling or other work is rapidly overtaken by the greater competency of aerial applicators to make sound application decisions.

In other words, the current competency of aerial applicators reduces any risk to a level below that of ground applications.

Commercial Operators Licencing

Aerial applicators cannot perform a spray job without first attaining the following:

- A CASA Commercial Pilots Licence, including significant study and examination on meteorology (minimum 175 flying hours of training, over a number of months and requiring significant additional ground training, several detailed examinations with a pass mark of 75%, a further flying test and an investment in the order of $60,000)
- A CASA Agricultural Rating, including further study and examination on meteorology and risk management training (minimum 42 hours of flying training, a written examination with a pass park of 75%, and a flying test conducted by a CASA approved specialist agricultural authorised testing officer and an investment in the order of $15,000)
- 20 hours (flying hours) of direct supervision during initial applications
- 110 hours (flying hours) of indirect supervision during subsequent applications
- State chemical distribution licence, based in all States (except WA) on the AAAA Spraysafe accreditation, which requires study of a 270 page manual and an examination with a pass mark of 70%
- A job with a licenced aerial operator, under whose supervision, company policies, CASA approved Operations Manual, CASA approved Chief Pilot and CEO, insurance, OH&S policies and other procedures the pilot must operate.
- Licenced aerial operators are required to have as a minimum:
  - an Aerial Operators Certificate issued by CASA after rigorous investigation of the company, personnel, qualifications and facilities. This licence covers all aspects of aviation safety, operations and maintenance of aircraft.
  - an approved Operations Manual that covers emergency procedures, normal operations, key personnel, aircraft maintenance etc.

- an approved rigorous maintenance program to ensure aircraft are airworthy before each flight.
- a Chief Pilot, approved by CASA after a comprehensive interview, with responsibilities including oversight of safe operations and pilot management.
- regular on-site audits by CASA Flying Operations and Airworthiness Inspectors, as well as various renewals and checks of every pilot's licence, pilot medicals, and company systems.

Compare this to the requirements for a ground operator:

- In some States, a requirement to be competent at only AQF level 2 (not meant to be
- without direct supervision)
- In some other States, licencing for commercial applicators (not including farmers), but no competence mandated
- For farmers and their staff, no requirements (except potentially for NSW, but with little enforcement as there is no licensing)

Any training offered within the ground rig community has difficulty garnering support because there is no mandatory training requirement. Some ground application training courses, as reported at an APVMA drift management seminar, only attract 1 or 2 people when the break-even for this training is generally around 15 people. Some ground application training courses have questionable relevance to risk management, being primarily focused on calibration issues and missing important subjects such as detailed meteorology, planning and drift management.

A key issue for concern with ground application and training is the lack of a coherent national industry association that is working towards ongoing education and accreditation and professional development, as is the case in the aerial application industry.

Key steps for improving ground application standards include:

- improving the level of ground operator training to better match real world requirements by having some of the national competencies at AQF level 4 covered (especially superior knowledge of meteorology and risk management and planning) as a mandatory part of the recognition of approved courses. (AAAA's Spraysafe already exceeds this standard)
- linking chemical access to proof of competence (ie presentation of a licence, Spraysafe certificate or for ground operators a Chemcert card), preferably at the national level.
- urgent extension of the competence requirement through mandated training at least at AQF level 3 for ***all*** ground operators, not just commercial operators

Farmer competence

Farmers applying chemicals on their own land should be required to possess the same competency that other applicators (at this stage only aerial applicators) are required to have as the risk they run of causing damage outside their farm is the same as a commercial applicator.

Farmers are putting out the same chemicals in similar quantities (or greater) but without any of the education, training or licencing required of aerial applicators and often in ignorance or direct contravention of the label requirements.

All ground rig operators, including orchard and other sprayers, should be required to be licenced for the application of any chemicals, regardless of distinction between herbicide or pesticide, especially as the environmental and implications of off-target application by ground rigs are significant.

While NSW has already required this, other States have indicated they will not follow.

Agronomists and consultants

The use of agronomists and other consultants by farmers is now a standard practice across Australian agriculture.

However, the regulation of the accountability and competence of agronomists has not kept pace with their emergence as a key adviser exerting considerable influence over the outcome of a chemical application.

Agronomists have not been legally drawn into the loop of responsibility that should engage all those playing a major role in the key decisions surrounding chemical application.

The agronomists' role is often critical in chemical application – they decide the pest to be targeted and often recommend the chemical to be used, the rate of application, coverage required, and may even recommend water rates, droplet quality, equipment or drift profile – all of which subjects they may or may not have any competence in.

Many agronomists put pressure on applicators to treat the target field as soon as possible, regardless of weather conditions or drift considerations, as they feel they are not accountable or responsible for the outcome.

It is a reasonably regular occurrence that agronomists will recommend practices that are 'offlabel'. In these cases, it becomes the applicators' responsibility to act as policeman – sometimes at the cost of the job. While some States have a theoretical head of power to enable agronomists to be prosecuted for an offence should it be able to be proved that they provided advice that led to an offence, these provisions (such as in the *NSW Pesticide Act 1999*) remain untested. In other States the head of power does not exist in any overt form.

While some agronomist's professional organisations exist – such as the Cotton Consultants Association – there does not appear to be a national professional representative body for agronomists that has a code of conduct, disciplinary measures, or education or professional development programs.

To ensure that this key group of players in chemical application are brought into the loop of responsibility for safe chemical application, government should consider (in the absence of a clear commitment to self-regulation by agronomists) regulation of agronomists by mandated competencies, training, licensing and record keeping.

Loader Mixer Accreditation Recognition

In 2005, the NSW DEC introduced training regulations that extended a requirement for mandatory AQF 2/3 level training to all chemical users, including those that mix and load chemicals but who do not apply them.

Spraysafe training for loader-mixers was deemed to be non-compliant with the regulations.

AAAA recognised that people mixing and loading chemicals should have training and instituted loader-mixer training as part of our Spraysafe program some 20 years ago. That training is sector and task specific, is based on a 200 page manual, a video, a 2 hour exam and a workplace-friendly reference guide.

As with our Spraysafe accreditation for pilots, that training is not delivered by an RTO and is consequently not a DEC 'approved' course. That is essentially because we are a very low throughput industry that cannot economically sustain such a significant training infrastructure cost. In NSW, less than 12 pilots and even fewer permanent loader-mixers are trained each year.

The training we provide is specific to the task and risks, covers the essential competencies and has been delivering safe and competent staff for years.

Support staff who mix chemicals under the supervision of a licenced applicator should not be required to seek additional expensive training that is aimed at applicators rather than support staff.

For example, the competencies in an applicator's course would appropriately include risk assessment, knowledge of meteorological theory and practice, spray performance, droplet behaviour, efficacy, calibration and spray equipment etc. Spraysafe for *pilots* covers this completely and has been independently assessed at a significantly higher standard than any of the 'approved courses' (based on an independent mapping of Spraysafe against the relevant national competencies by the Rural Training Council of Australia and more recently confirmed by another review carried out by an independent consultant agreed with DEC). However, to require this high standard of a person that only *mixes* chemicals

is simply not relevant to the safe *application* of the pesticide. The competencies loader-mixers require (also covered in the pilots' accreditation) include reading the label, using the appropriate personal protection equipment, getting the rate right, proper disposal of empty containers etc.

As they do not have to apply the product, there is little point in requiring them to have a qualification and competencies designed for applicators and which loader-mixers will never use.

The AAAA was unsuccessful in its efforts to seek relief from this NSW-specific requirement.

AAAA sought assistance from Chemcert (NSW) in providing recognition of prior learning for Spraysafe accredited loader-mixers The content of the Spraysafe loader-mixer qualification was assessed by Chemcert as meeting all of the relevant competencies except for those relating to calibration of spray equipment and actual application of chemicals – two tasks that loader-mixers ***never*** perform for aerial applicators. Unfortunately, despite this very positive assessment by Chemcert, no commercial providers of chemical training were willing to provide the 'gap' training required, but rather insisted on loader-mixers completing the full course – and paying the full fee. This was an excellent example of why the AQF/RTO system is failing low throughput training sectors as a result of crass commercial pressure.

As a consequence, Spraysafe for loader-mixers in NSW is no longer promoted by the AAAA.

Instead, operators and loader-mixers are advised by AAAA to undertake the less relevant commercially available courses at considerable costs and inconvenience and which do not deliver the relevant competencies to the same degree as the Spraysafe program.

The NSW government has managed to undermine a program that is actually delivering the very outcome it is pursuing, at the same time as reducing relevant and job-specific training and placing itself at odds with all other jurisdictions.

Responses to the PC Discussion Paper

Alternatives to government regulation

AAAA has proven with its Spraysafe and other programs that cooperative regulation that engages both government and industry in a positive dialogue about improving outcomes is a sound model – one that is generally superior to government-only regulation.

The power of education and training should not be underestimated for the vast majority of industry members who are committed to compliance, professionalism and due diligence.

AAAA's ongoing professional development program – the Professional Pilot Program – has seen a number of significant training and education courses delivered to Australia's aerial application pilots and operators, including aviation safety courses and a drift management course. This is backed by research work, including wind-tunnel research at the University of Queensland on spray nozzle and aircraft performance and the development of computer based calculators to assist applicators.

In addition, AAAA has been developing a comprehensive systems-based quality assurance and safety program for the last several years that is based on independent auditing, but progress has been compromised by the drought and a lack of government interest in assisting the industry to attain a higher standard of performance through supporting funding.

The success of programs such as Agsafe/Guardian and AAAA's Spraysafe should encourage government to be more open to working with industry Associations rather than simply relying on the very blunt tool of ever increasing regulation.

The negative cumulative effect of Government demands

Red tape and compliance with the myriad Government regulations that affect aerial application is a serious impediment to business. Owners and managers grapple every day with the heavy burden of the requirements of regulation that has been implemented with no thought for the overall cumulative demand on industry.

For example, the Civil Aviation Safety Authority (CASA) recently proposed a six monthly mandatory survey of the industry, despite them already holding a significant percentage of the information.

The argument was put forward from CASA that such a survey "would only take a few minutes" – but this completely misses the point. There are literally dozens of government agencies that require "just a few minutes". Overall, 'just a few minutes' makes small business owners feel as if they are working for the government rather than themselves.

The aerial application sector is required by law to keep comprehensive records of every single job, is required to keep close control of inventories, must be compliant with State dangerous goods regulations, and has to comply with fair trading requirements. Of course, many demands are different between States.

The aerial application sector is licenced for chemical application (both pilots and businesses) separately by every State and Territory, as well being required to hold licences and medical certificates from CASA. Most pilots also hold an Aviation Security Identification Card that must be renewed every few years.

And this is on top of the normal business costs associated with ASIC, ATO, OH&S, Workcover, CASA and surveys for ABS.

CASA is only one regulator. The demands of chemical regulators are equally challenging.

The cumulative effect of uncoordinated and often inefficient government demands on industry is such that industry is shouldering a burden that is not commensurate with the value the community gets from the myriad government demands on business' time. The lack of cooperation between the jurisdictions and between each jurisdictions' own Departments is far from what the community should expect for its tax dollar.

A consistent national approach to managing the regulatory burden on industry that takes note of the total regulatory load rather than just one small part of it would be a significant improvement.

Consultation and access to technical expertise

In many cases technical expertise no longer rests exclusively or at all with regulators. However, a few chemical regulators still appear to be of the attitude that industry has a very restricted or even no contribution to make in helping regulators get a good outcome.

Industry employs many individuals with relevant expertise that could be made available to government regulators if regulators had a more open attitude and put in place systems to encourage engagement and consultation with industry.

For example, despite clear interest and enthusiasm from APVMA to form a technical working group on aerial application, such a group has not eventuated - even though such a group would significantly enhance the capability of APVMA to produce better chemical labels.

Conversely, a number of State chemical regulators work with AAAA to promote an open dialogue and use AAAA and its members as a technical information resource that leads to better policy outcomes.

However, consultation on the registration of chemicals is essentially non-existent through the APVMA, unless the AAAA or individual operators are involved in either field-testing or the development of the label by the chemical company itself. This is in contrast to the process for making input into chemicals under review by the APVMA, where there is often an ability to make a submission, or better still, to sit on a working group providing information and expertise to APVMA on the review.

Greater recognition of existing qualifications and removal of duplication

AAAA believes that the current *de facto* national recognition of Spraysafe for pilots, mixers and businesses should be further developed into a national licencing system for aerial application businesses that replaces the current duplication and costs with a more efficient system.

AAAA has been working with various PSIC working groups on this outcome since 2001 without an outcome. There should be more ready recognition of existing licences, qualifications, competencies and skills held by pilots to ensure ongoing access to chemicals.

For example, most pilots hold an Aviation Security Identification Card that involves checks for politically motivated violence by ASIO, the AFP and DIMEA. Such a qualification/accreditation (in conjunction with CASA licences/rating and Spraysafe accreditation) should enable the holder to automatically qualify for a range of other privileges, such as access to chemicals of security concern, SSAN, the APVMA proposed restricted chemicals category etc.

Industry should not have to repeat the same or largely similar exercises several times to comply with different government requirements.

Access to information

Chemical Packaging and Labelling
Chemical packaging and labelling remains an issue of concern for AAAA.

Many chemicals are packaged in such a way as to almost ensure confusion between very different chemicals where labels are of very similar design and similar colours. A national system of labelling of chemical products should be introduced where drums and other containers are clearly colour coded to remove confusion.

As a considerable amount of spraying takes place at night to take advantage of better metrological conditions, the need for clarity in labelling is even more important.

For example, insecticide packaging could be colour coded red, herbicides green and fungicides blue.

Chemical Drum Design
In addition, the actual containers used for chemicals are often difficult to pour from without splashing and 'glugging' and the attendant increased risk to the user. A national standard agreed with industry would be a very useful starting point for improving the safety of chemicals in the field.

Access to Labels and MSDS
Another challenge for all chemical applicators is the lack of easy access to the current full label and MSDS information for the particular chemical they need information on. Many labels on drums are water or sun-damaged and quite difficult or impossible to read.

AAAA believes that a national free website should be established where users can search and access all approved labels, MSDS and permit information. Currently two State Departments of Primary Industry sell a CD based product that provides this information, complete with regular updates, however, a website would be a much better approach to ensure all relevant information is available.

Alternatively, APVMA could require all chemical registrants to maintain their own websites to provide information for their products, including full labels and MSDS, and to have that website address mandated to be printed on the chemical drums and labels. This would considerably alleviate the difficulties with keeping up-to-date MSDSs on site in hard-copy.

Background Information

The AAAA ('four As')

The Aerial Agricultural Association of Australia (AAAA) was formed in July 1958 at a meeting jointly convened by the then Department of Civil Aviation and the Bureau of Agricultural Economics.

AAAA's mission is to promote a sustainable aerial agricultural industry based on the professionalism of operators, pilots and staff and the pursuit of industry best practice.

- Membership of the AAAA consists of operators of agricultural aircraft. There are approximately 130 active operators in Australia and there is also a category for pilot members. AAAA has 75% operator membership controlling 90% of aircraft in use and is therefore representative of and qualified to speak on behalf of the agricultural aircraft industry.
- Capital investment in the industry exceeds $200 million. Agricultural aviation directly employs 2000 personnel comprising pilots, field staff, maintenance staff and administrators in non-drought periods. A further 2000 people enjoy part-time employment. The industry uses more than 300 specialist aircraft with supporting vehicles and equipment, together with established aircraft maintenance facilities throughout the country.

- The Association has its National Office based in Canberra and is governed by a Board of Directors with representation from each State/Territory. The Board is in constant consultation with the CEO and local agricultural operators and meets formally on a regular basis.
- The industry has progressed considerably in knowledge, skill and degree of professionalism since the late 1940's image of the 'crop duster'.
- Today's 'ag pilot' is highly trained and licensed under both Federal and State legislation. No other applicator of agricultural chemicals has the degree of training of the ag pilot, who is required to have a commercial pilot's licence, an agricultural rating and a chemical distributor's licence. The majority of operators and pilots are accredited under the AAAA 'Spraysafe' program.
- One of AAAA's key roles is to enhance education and professional development throughout the industry. The Association conducts a comprehensive program of conference, National Convention, training and education activities to keep members up-to-date with legislation, practices and other developments. Meetings include technical Air Improvement Meetings (AIMs) for rice, cotton, Far North Queensland and top dressing, State Conferences and the annual National Convention.

AAAA has a comprehensive policy on Chemical Application that is available on our website at *www.aerialag.com.au*.

Government Goals and the Environmental and Economic Importance of Aerial Application

The productivity gained in agriculture and forestry through the responsible use of chemicals and nutrients applied by air is substantial. In many cases, the inherent advantages of aerial application are absolutely critical to the effective protection of crops and products.

The need to aerially apply chemicals and fertilisers to tall crops such as forestry, bananas and sugar cane and irrigated crops such as cotton and rice are important examples of where aircraft deliver a service that is simply not available from ground applications. The restriction of aerial application would equate to very significant lost productivity if the various applications could not be made in a timely manner.

The economic costs of such lost productivity if aerial application was restricted would be in the millions of dollars through direct lost productivity and lower yields, with the knock-on effects of lost employment, damage to crops, falling soil fertility etc even greater.

The environmental costs would also be significant as it could be expected that as more chemical would be applied by unlicenced and generally unregulated ground applicators, the risk of drift and other chemical contamination (such as from spills due to more mixing sites being required) would also increase.

Importantly, the high level of training of pilots and support staff in the aerial application sector should provide government with significant comfort that chemical application is in the hands of professionals who are dedicated to sustainable agriculture and forestry practices.

Some additional advantages of aerial application include:

- Aerial agriculture protects Australia's environment by ensuring that the application of chemicals is undertaken by highly trained professionals who are fully accountable to government regulators.
- Aerial agriculture is very cost efficient - aircraft cover large areas quickly, the aircraft is the most efficient application platform and it has unique and significant advantages over ground application.
- Air ag employs about 2000 people across Australia in a 'normal' season - including pilots, loader/mixers, aircraft engineers, and support staff. We make a significant contribution to rural communities in addition to our work for farmers.
- Ag pilots are well educated and trained about drift management and the efficacy of chemicals. They understand the importance of making the chemical work for the farmer, but they also understand the importance of not drifting outside the target area, and they have a number of tools to assist them with this, including nozzle calculators, computer drift-modelling, highly flexible aircraft set-ups, the use of buffers, ensuring the wind is blowing away from any sensitive areas, changing the size of droplets to match conditions and delaying sprays until more favourable conditions.
- Drift management is a central feature of the training and ongoing education of ag pilots. All ag pilots understand the importance of the droplet spectrum coming out of the spray boom and all ag pilots know how and when to change that spectrum to suit particular conditions. The main decision operators and pilots face every day is how they can safely carry out sprays in the conditions they have using the variable equipment settings and techniques available. AAAA's latest training program – the AAAA Drift Management Course – is currently being delivered to Australia's ag pilots based on the most recent research and international best practice.
- Ensuring due diligence is a critical part of aerial application. Each pilot must ensure that they have assessed each spray job to control drift, that they have delivered the chemical to the target pest or weed, and that they can do it all safely.
- Ag pilots are professionals - they have a big investment in education, they undertake ongoing training, they are multiple licenced and heavily regulated - and they are committed to their industry and their clients.
- Aerial ag operators use only APVMA approved chemicals in accordance with label
- directions.
- Very detailed risk management based planning for each job that protects environmentally sensitive areas.
- The use of aerial ag reduces the number of people involved in the application of chemicals and thereby reduces the exposure of workers to the chemicals used.

Key Benefits to farmers, agriculture, forestry and consumers

- Air ag is unaffected by wet ground. Ground rigs are dependent on dry ground.
- Air ag is unaffected by crop canopy closure. Ground rig use after crop canopy closure is likely to lead to damage of the crop and a yield loss of around 5%.
- Air ag can apply over tall crops, including forestry, accurately, efficiently and safely.
- Great speed to cover large areas - ground rigs would take days or even weeks to cover what it takes air ag hours.
- Reduced exposure to weather variations - able to take greater advantage of short weather windows - less likely than ground rigs to be spraying in poor conditions.
- Improved efficacy - aircraft utilise disturbance of the crop from wake turbulence to ensure good penetration of chemicals into the crop and better coverage.
- No disease transfer as the aircraft does not touch the crop
- No soil compaction.
- No trampling of the crop like tractors, spray rigs or quads.
- Over $20 million invested in research into controlling spray drift by the US EPA and Dept of Agriculture and chemical companies alone over the last 10 years. AAAA and operators have access to this research.
- All pilots have a solid understanding of the theory behind droplet behaviour as part of their agricultural rating, Spraysafe qualifications and ongoing professional development.
- Australian operators invest tens of thousands of dollars each year in pattern testing, a process that ensures their aircraft are set-up in the most efficient and productive way to give the least drift and best efficacy.
- A professional industry available for emergency services use - fire fighting, oil spills, plague control.
- A significant employer in rural and regional Australia.
- A ready pool of highly experienced low-level qualified pilots.
- A provider of aircraft maintenance services for general aviation across regional Australia.
- A key partner in ensuring farmers have access to world class technology.

The myth of ground rigs and reduced drift

In terms of ground rig operations, there is little doubt that any inherent ‘advantage’ the ground rig may be perceived to have over aircraft in terms of propensity to drift is quickly offset by the current poor level of education of ground rig operators in terms of meteorological conditions and other vital factors affecting spray operations.

In addition, the ground rig takes far longer to cover an area than an aircraft, the result being they are exposed to deteriorating and varying meteorological conditions if they spray during the day, and probable surface temperature inversions if they spray throughout the night.

These factors completely erode any distinction that should be drawn between ground rigs and aircraft for the purposes of setting regulation.

In addition, as more and more ground rigs are used, this will considerably lift the overall number of people involved in the handling and application of chemicals over a longer period of time, increasing overall industry health exposure risks. This is a critical problem if education and safety standards are not up to a level commensurate with the safe handling of chemicals.

Aerial application is not a higher risk

AAAA totally rejects any claims that simply because a chemical is applied from the air that it is a higher risk application.

AAAA also rejects the concept that by its very nature an aircraft is more susceptible to drift than a ground rig. The real issue is how either spray platform is set-up and operated. There are plenty of examples of spray drift occurring from ground rigs and to ignore this fact is to simply develop policy that is meaningless and ignorant of the real life experience of regulators, insurance companies, farmers and applicators.

By making aerial application an automatic increased 'risk' category in chemical registration ignores the fact that pilots are better trained than other applicators, operate in a more disciplined environment thanks to aggressive control-of-use legislation, State enforcement and insurance company regulation, are fully accountable for their actions due to strict record keeping requirements, are highly visible and generally operate from fixed bases that can easily be subjected to investigation and audit.

The real issue is whether the applicator, regardless of being aerial or ground based, is competent, has read and understands the label, has carried out a risk assessment, has an application management plan including appropriate spray platform set-up, and monitors conditions to ensure they stay within their application plan.

The Spraysafe Program

Spraysafe - a professional education and training program

Spraysafe was initiated in early 1985 when AAAA convened a meeting in Canberra with aircraft operators, chemical companies, the Departments of Primary Industries, Agriculture, Environment and conservation groups. At this meeting it was identified that the agricultural industry needed an initiative to establish increased professionalism and a framework for continuing improvement in the application of agricultural chemicals by aircraft.

Spraysafe today

AAAA regularly reviews the Spraysafe program to ensure it remains a relevant program that continues to enjoy the confidence of clients, related industries and government

regulators. Input and support for reviews is solicited received from State regulators (the relevant Departments of Ag./ Primary Industry/ Health or EPAs), APVMA, Agsafe and others with an interest in our industry.

In summary, Spraysafe features:

- different requirements for accreditation for operators, pilots and loader/mixers
- an independent audit for operators to be accredited
- a surveillance audit program for operators
- re-qualification requirements following loss of accreditation for operators
- a requirement to advise AAAA of any significant change to activities
- triennial renewals for operators
- triennial renewals for pilots, with the option of resitting an exam or proving compliance with the AAAA Professional Pilot Program
- supporting manuals for operators, pilots and loader/mixers
- a training video and summary manual for loader/mixers
- examinations for pilots and loader/mixers for initial issue
- an ongoing Spraysafe promotional program
- Spraysafe accreditation at all levels is open to AAAA members and non-members alike, although the fee structure reflects the ongoing contribution to AAAA activities of our members.

Accreditation Levels Under Spraysafe

Accreditation of Operators

Operators are required to meet stringent guidelines in order to achieve Spraysafe accreditation, including a full independent inspection of the operators' facilities.

Initial accreditation requires the completion of an independent evaluation of the facilities and systems of the company against the AAAA Spraysafe checklist.

Renewed accreditation requires the completion of a triennial self-assessment checklist. These self-assessments are supported by a surveillance audit program that audits approximately 20% of accredited operators each year.

Accreditation of Pilots

Agricultural pilots are required to have a comprehensive knowledge of industry-related issues and practices. Pilots are examined on their knowledge of the 270 page *"Pilots and Operators Manual"* with a two hour exam. This exam is externally supervised, returned to and marked by the AAAA office. The pass rate required is 70%, and upon successful completion of the exam a certificate is issued to the pilot. To date, over 700 pilots have successfully completed the Spraysafe exam since 1985.

The examinations are currently under review, with new examinations likely to be introduced next year. They will feature a higher pass mark of 75%, compulsory-pass case

studies and a wider range of updated questions, and will be cross-referenced to both the Spraysafe Manuals and the national competencies.

The pilots Spraysafe accreditation has a validity of three years, at which time the pilot has to either sit an examination for renewal or prove compliance with the AAAA Professional Pilots Program.

Accreditation of Loader / Mixers

In order to facilitate correct procedures on the ground, loaders and mixers (ground support staff) have been assisted with the correct methods of handling chemicals via the second manual produced by AAAA, the *"Chemical Handling Manual for Agricultural Aviation"*. The loader / mixers are tested on their knowledge of this manual, examined for two hours and receive certification upon successfully completing the exam. The pass rate is 70% and over 130 have been accredited.

Other Issues

Both the *"Pilots and Operators Manual"* and the *"Chemical Handling Manual"* were comprehensively reviewed and updated in 1998 by the University of Queensland's Centre for Pesticide Application and Safety (CPAS).

AAAA is currently reviewing the Manuals to ensure their relevance. AAAA anticipates adding further drift management material to the manuals, especially when the drought breaks and resources permit, given there is no Government interest in supporting such an improvement.

AAAA rewrote (with CASA support) the Aerial Application Manual for Application Pilots in 2005. This is now a world-leading publication on aerial application that incorporates risk reduction, due diligence and human factors with the hard-won experience of aerial applicators. All aerial application operator and pilot members of AAAA were sent a copy.

A further initiative of the Association under Spraysafe has been the education of our clients - farmers, farm advisers and consultants. Farmers and agronomists need education regarding correct aerial application techniques to ensure that no agricultural pilot or operator is pressured into applying chemicals under adverse or unsafe conditions.

AAAA recently developed and is now delivering a new course for aerial applicators, agronomists and clients on Drift Management. This is another on-the-ground education program that is delivering important information to users and again which is being delivered without Government support.

In summary, the Spraysafe program is aimed at ensuring applicators, pilots and support staff meet agreed standards in a number of key areas. The Spraysafe program is a significant education program for the continued professionalism of the industry and has excellent support from all levels of the industry.

Spraysafe Pilot Accreditation relationship to the AQF

The practicalities of delivering a very specialised, very low throughput training and assessment program (about 20 pilots nationally in 2006) to often remote areas where pilots are based, should lead to a fundamental recognition of the value and success of Spraysafe.

The pilot accreditation component of the Spraysafe program was independently reviewed by the Rural Training Council of Australia in late 2001, and the independent consultant found that the Spraysafe program, when mapped against the national competencies for chemical application, covered 100% of AQF level 3, 90% of AQF Level 4 and 40% of AQF level 5 competencies.

The assessment component of the pilot accreditation was also independently reviewed in cooperation with the NSW Department of Environment and Conservation in 2004, and the independent consultant (formerly the Head of Education for the EPA) made a series of recommendations to improve the assessment component of the program that AAAA is implementing.

The more recent independent review also found that the pre-existing qualifications and competencies gained by pilots before Spraysafe accreditation probably push the program's real performance even higher in terms of meeting the national competencies, especially in terms of risk assessment and skill in assessing meteorological conditions.

The more recent independent review identified that there are a whole range of relevant aircraft handling, risk management, meteorological and related competencies that aerial application pilots are trained in and which are continually reviewed as a result of their CASA licences.

Importantly, the independent consultant also found that:

> "Loading such a low throughput training program with the full costs and protocols associated with AQF / RTO system would potentially lead to the collapse of the very system that is delivering very useful and relevant training in this industry. Self directed training through the use of the manual and through appropriately supervised, local assessment processes represents the only way that training can continue to be sustainable in this sector."

On the basis of these independent reports, NSW continues to recognise Spraysafe as the *de facto* national competency standard for aerial application, as does every other State with the exception of WA (although they rely on licences issued in other States on the basis of Spraysafe accreditation). AAAA understands that the WA situation is as a result of limitations of current legislation which have been slated for change for the last 5 years.

Spraysafe is an excellent program that is delivering exactly the outcomes that government and the community wants.

Weaknesses of the AQTF

The myth of portability

The AQF, national competencies and RTO system was developed to aid industry through improved portability of qualifications so that a qualification, once attained from any one jurisdiction, could be recognised in any other jurisdiction.

However, a major failing of the AQTF is its high cost, heavy burden of paperwork and its irrelevance to highly specialised, low throughout training such as that provided by AAAA under the Spraysafe program.

This is especially true where there is no relevance of the 'portability' argument in terms of movement between sectors, as is the case with aerial application. Pilots do not generally move to other sectors or even to ground application where the competencies they are trained in are relevant.

Economic reality and low throughput

RTO's are not interested in being involved with a program that does not make them money.

Spraysafe is essentially provided on a break-even basis as a support service to members and to try and ensure that all pilots have the relevant training they need to carry out their jobs safely and effectively.

In the case of training for aerial application pilots for example, throughput in recent years has been as low as 20 pilots per year, with the average over the longer term being about 40 per year. That is a national figure that when compared to the 30,000 people put through Chemcert training each year gives some sense of perspective to the training task.

To put it bluntly, forcing the full AQTF system with all of its incumbent costs on to low throughput training programs is only likely to lead to their demise.

Distance issues

Many of the pilots trained through Spraysafe are located in rural and remote areas, adding a further degree of complexity to providing relevant training in a timely manner at affordable cost – both to the pilot and to the Association.

The current method of Spraysafe training and assessment is working well, is robust and secure and fulfils the outcomes required by government in terms of relevance to the national competencies.

AAAA's Professional Pilot Program

In 2002, AAAA initiated a world-class professional development program through the AAAA's Professional Pilot Program (PPP).

This introduced a validity period on the pilot's Spraysafe accreditation of three years (superior to the five year life of a Chemcert qualification), and requires pilot's to either resit an examination before the expiry date of their accreditation, or prove to the AAAA that they have gained 15 education credits from approved courses or activities under the PPP.

The latest independent review of the Spraysafe program also comprehensively considered the role of the PPP and its importance to ongoing professional development and maintenance of competency standards. The independent consultant found that the PPP was a very appropriate mechanism to ensure ongoing maintenance of standards.

Some key issues that all jurisdictions could usefully pursue include:

- maintaining national recognition of Spraysafe for pilots chemical distribution licences.
- stepping up the work with other State regulators to develop a sensible national chemical control of use licence for aerial application that is based on recognition of the Spraysafe pilot's accreditation.
- Giving consideration to the introduction of a requirement that all aerial operators are ***either*** Sprayafe accredited (ie at the operator level of accreditation in addition to the pilots level of accreditation) ***or*** are able to demonstrate to the regulator that they can achieve the same or higher standards.
- AAAA already has this arrangement in place with Victoria and Tasmania. In Tasmania it is a condition of licencing for aerial operators to be Spraysafe accredited, although the Victorian model is superior (ie either recognising Spraysafe or evaluating the company as having achieved an equivalent standard). AAAA is only too happy to make its Spraysafe checklist and auditor's guide available to all States and Territories.
- The reason this is an important change is that the risk of AAAA being sued for loss of income is real should AAAA remove or not renew an accreditation on the basis of non-compliance or, more likely, try and increase standards through Spraysafe that some operators either can't or won't comply with.
- Allowing operators the opportunity to demonstrate they can achieve a similar standard without having to actually be Spraysafe accredited would free up AAAA to raise the standard of Spraysafe even higher.