

NATIONAL WORKING PARTY ON PESTICIDE APPLICATIONS

Chair's Quarterly Report - August 2013

The NWPPA is working to bring a national, coordinated technical approach to spray drift issues. I believe that has been acknowledged and recognised by stakeholders.

Our vision is that the regulatory system is science based and recognises the use of drift reduction technologies, better education and practice to enable the use of smaller, practical buffer zones.

The NWPPA Executive Committee has developed a program of research to help fulfil that vision.

The program is designed to support the development of science based processes for conducting spray drift risk assessments of pesticides that, when implemented, could:

- (1) Enable and facilitate operational and practical use of downwind buffers and
- (2) Provide mechanisms for the Australian regulatory system to recognise and support industry best management practices and the adoption of drift reduction technologies (DRTs).

We hope that this research will allow the APVMA to revise its processes and regulations so that we are able to achieve practical downwind buffers.

Projects progressing quickly

The program currently comprises some 11 coordinated projects, (see Figure 1 p. 2) which can be divided into three groups:

- (1) The identification and characterisation of DRTs capable of being adopted in the grains, horticulture and viticulture industries using both ground and aerial application.

- (2) The development of technical quantitative assessment methods that enable growers and applicators to readily identify and adopt DRTs and also enable these technologies to be recognised and characterised by the regulatory system.

- (3) Initiatives to facilitate engagement between national and international regulators, pesticide applicators, educators and other supply chain stakeholders.

As outlined in the project summaries below, research projects are well underway to support the identification and assessment of DRTs in grains and viticulture industries (both ground and aerial application). A review of application practices in horticulture has provided information to support further development and testing of DRTs in a range of horticulture crops.

Core projects are being supported by technical work to improve the accuracy of international spray drift models and regional area forecasting of surface temperature inversions, which are an established cause of spray drift incidents.

For further information on any of the initiatives reported in this newsletter please contact: **Gavan Cattanach**, Chair, NWPPA gcattanach@jta.com.au; **Nicholas Woods**, NWPPA Secretariat, nwoods@phau.com.au



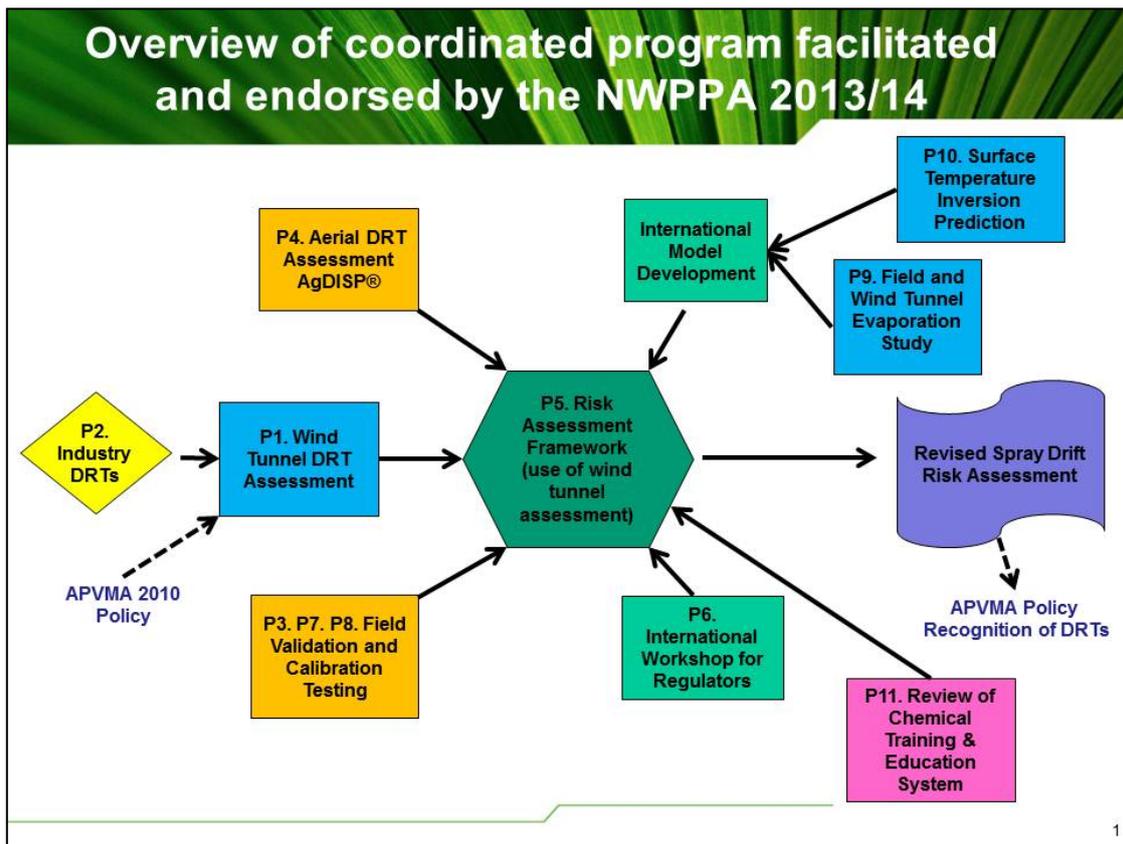


Figure 1 NWPPA projects

Technical Working Group

At the heart of the current program is the work being conducted by the NWPPA Technical Working Group (TWG). A group of scientists from APVMA, Department of Sustainability, Environment, Water, Population and Communities (DSEWPac), GRDC, university sector and independent consultants are currently reviewing available data that would support a new technical approach to the spray drift assessment of pesticides that would meet the needs of the NWPPA and regulators.

The first core project (Project 1), which establishes a DRT database, is scheduled to be completed by June 2014, and the TWG is working to present a technical model for consideration by the NWPPA within the same timeframe. (See more details below.)

A successful outcome would see the adoption of a new nationally agreed process for the assessment of DRTs that could recognise grower best

management practice, facilitate rapid assessment of DRTs by the regulatory system and make use of practical operational downwind buffer distances.

NWPPA Annual Meeting - June 2013

On 13 June 2013 around 50 industry and government stakeholders attended and participated in the NWPPA Annual Meeting in Canberra.

Attendees were brought up to date on current initiatives endorsed by the NWPPA in presentations given by researchers, industry representatives, government officers and the NWPPA secretariat.

Copies of all the speaker presentations are available from the NWPPA secretariat upon request.

PROGRESS ON PROJECTS

Assessment of Drift Reduction Technologies

Project 1 is a three year research project being undertaken by the University of Queensland , to determine the



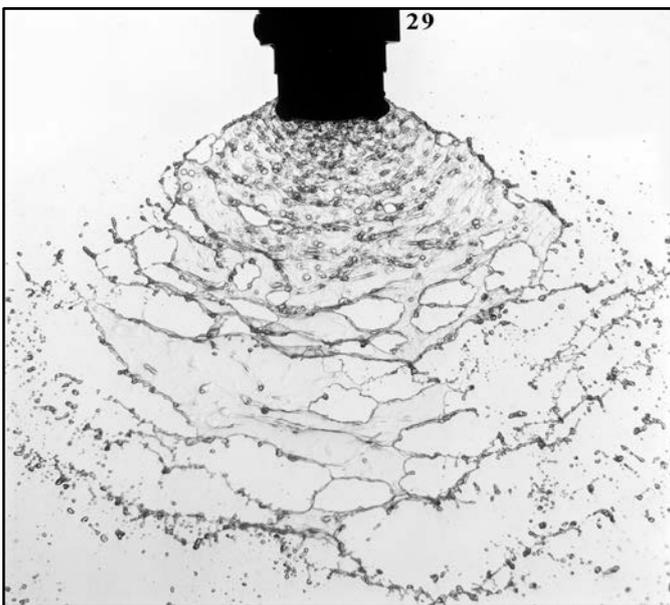
effectiveness of different DRTs and chemicals using a specialised wind tunnel facility located at Gatton.

This work is designed to support the development of a system that will enable both industry and regulators to assess ground and aerial sprayer DRTs in a time efficient, science based and transparent framework.

The work is developing a new technical database (accommodating nozzles, formulations and adjuvants) that will support the use of DRTs for the application of pesticides using both aerial and ground equipment.

Some 1,340 measurements covering dozens of nozzle types and mostly glyphosate and 2,4-D formulations have been carried out so far. The data has been screened and regression models are under development for AIXR nozzles. It is likely that this work will allow development of fully predictive models rather than look-up tables

A process has been established by the NWPPA for interested stakeholders to nominate DRTs for inclusion in this program. For more information please contact the NWPPA secretariat at Plant Health Australia.



NWPPA surveys of current practices

The NWPPA Executive Committee has endorsed several surveys designed to document industry spray equipment and application practices commonly used by growers, commercial contractors and applicators.

At the June NWPPA meeting hear the findings from a recent survey of horticultural growers that was commissioned by HAL.

The study, conducted by the University of Queensland, identified a range of DRTs currently being used by some growers and applicators. These include:

- Leaving the outside downwind rows unsprayed.
- Using coarse and very coarse droplets in conjunction with axial fan sprayers.
- Limiting ambient wind speeds to below 15 km/hr.
- Use of commercially available shielded (recirculating) tower sprayers.
- The influence of nominated adjuvants (on canopy coverage and drift reductions).
- Artificial and natural vegetative barriers.

The effectiveness of some of these DRTs will be determined in work being endorsed by the NWPPA.

Education and training

The NWPPA also recognises that professional development and training are important in assisting growers and applicators manage spray drift. In 2011/12 the NWPPA commissioned a report that reviewed the current professional development and training framework.

The review has shown that in Australia the impact of industry pesticide training programs has had outstanding positive impact on the competency of growers and applicators but that opportunities also exist to enhance current programs to support the recognition of DRTs and best management practice.

The consultant's report was released by the NWPPA for consultation and feedback at the beginning of July 2013. The NWPPA looks forward to receiving comments from stakeholders and will compile a response in the last quarter of 2013.

At the same time, the NWPPA will continue to have discussions with DAFF, APVMA and state and territory governments on how training and better practice can be recognized in the regulatory system.



Assessing DRTs and improving coverage in horticulture and viticulture

A project to investigate the use of DRTs in viticulture commenced in June, facilitated by the GWRDC. The project is examining the effect of droplet size, volume rate, the use of targeted air and enhanced spreading with formulation chemistry on spray coverage efficacy and spray drift management.

The findings from this project will significantly contribute to the NWPPA knowledge base in the area of performance of spray drift mitigating technologies in broad acre, horticulture and viticulture industries.

The project will focus upon DRTs for buffer zone minimisation and the evaluation of distance-based calibration for optimised dose delivery.

Management of surface temperature inversions

The management of spray drift also requires growers to have an appreciation of the influence of weather parameters. It has long been recognised that the application of agricultural sprays can be influenced by the stability of the atmosphere.

The NWPPA has endorsed a project to investigate the feasibility of using data from automatic weather stations to predict and detect the presence of surface temperature inversions. The project is planning to test a system that can provide alerts and specific forecasts in regional areas for growers and applicators when conditions are not optimal for spray application.

At the June NWPPA meeting, Warwick Grace reminded the delegates that there are some simple 'rules of thumb' for predicting the onset of a surface temperature inversion, namely:

1. A reduction in wind speed to below 15 to 20kph is necessary for all seasons.
2. In winter, a fall of at least 2°C from the maximum temperature recorded on the day promote an inversion even an hour before sunset.
3. In summer, a fall of at least 4°C from maximum temperature recorded on the day promotes an inversion an hour after sunset.

4. If the difference between the observed maximum temperature and forecast minimum temperature is 10°C or more then there is a 90% risk of inversion conditions at sunrise.
5. In winter, laminar flow sets in with a fall of 4°C from maximum even before an hour after sunset.
6. Laminar flow intensifies as overnight temperature decreases.
7. In summer, laminar flow sets in about an hour after sunset.
8. For laminar flow to occur wind speed must be less than 15 to 20kph for any season.

The June meeting also endorsed the following as the Executive Committee to guide the work of NWPPA in 2013-14. I would like to take this opportunity to welcome Michael Schaeffer, (Auschem Training Vic) and Ross Gillies (HVP Plantations) to the Executive Committee.

2013/14 NWPPA Executive Committee	
Gavan Cattanach	Independent Chair
Pete Mailler	Grain Producers of Australia
Colin Sharpe	Dow AgroSciences
Ben Stapley	Croplife Australia
Jorg Kitt	Nufarm
Ken Young	GRDC
Elise Heyes	GWRDC
Jodi Pedrana	HAL
Jolyon Burnett	Australian Macadamia Society
Trevor Ranford	Horticulture Industries
Joe Murrell	Australian Groundsprayers Association
Melanie Gengos	Farmoz
Matt Kealley	Canegrowers
Phil Hurst	AAAA
Ross Gillies	HVP Plantations
Michael Schaeffer	Auschem Training Vic

