SUBMISSION TO THE APVMA'S DIURON REVIEW

September 2011

NSW Farmers' Association
Level 25, 66 Goulburn Street
Sydney NSW 2000

Contact Alison Anderson, Policy Manager
p) 02 8251 1700
f) 02 8251 1750
e) andersona@nswfamers.org.au

NSW Farmers' Association Background
The NSW Farmers' Association (the Association) is Australia's largest State farmer organisation representing the interests of its farmer members – ranging from broad acre, livestock, wool and grain producers, to more specialised producers in the horticulture, dairy, egg, poultry, pork, oyster and goat industries.

Executive Summary

NSW Farmers supports the safe use of chemicals but sound evidence-based science must underpin the assessment of risk associated with any specific chemical use. NSW Farmers does not believe a scientific assessment of risk would warrant a blanket ban on the use of Diuron products nationally. NSW Farmers asks the APVMA to consider factors including farming system, spray technology, climate, topography and actual use patterns in their risk assessment of Diuron. These factors are highly variable within Australia. Therefore while some uses of Diuron in Australia will most likely require suspension, users of Diuron in low risk regions should not be penalised by a national suspension of Diuron products.

TABLE OF CONTENTS

1. Introduction

NSW Farmers is Australia's largest state farming organisation representing the interests of the majority of commercial farm operations throughout the farming community in NSW. Through its commercial, policy and apolitical lobbying activities it provides a powerful and positive link between farmers, the Government and the general public.

The Association welcomes the opportunity to provide input to the Australian Pesticides & Veterinary Medicines Authority (APVMA) on actual use patterns of Diuron and to respond to the *Diuron – Environment Assessment* report (the report), published by the APVMA in July 2011.

NSW Farmers supports the safe use of chemicals including addressing risks to aquatic ecosystems from Diuron. A risk assessment of chemicals must be underpinned by sound evidence-based science. NSW Farmers does not support the precautionary principle being used to underpin the regulation of chemicals.

NSW Farmers opposes the proposed suspension of the registration of Diuron products across all uses, farming systems and regions of Australia. This will unnecessarily penalise farmers in regions such as the wheatbelt of NSW. Environmental risk associated with Diuron use must take into account factors such as rainfall patterns and topography. NSW Farmers asks that use patterns, where the environmental risk cannot be managed using current label rates, be amended where reduced rates will remain effective and will not lead to resistance in weeds.

NSW Farmers agrees that some use patterns may need to be revised or suspended to protect aquatic ecosystems and supports action when the environmental risk cannot be managed adequately.

2. Risk Assessment

Chemicals are an important component of sustainable farming and Australian farmers need to have access to chemicals which allow them to produce agricultural commodities using world-leading good agricultural practice.

NSW Farmers asks the APVMA to assess the risk posed by Diuron to aquatic ecosystems by taking into account farming systems, climatic region and topography. Any decision to suspend the registration of Diuron products must take factors such as Australia's highly variable rainfall patterns and proximity to sensitive marine environments into consideration, as well as current use patterns.

Coverage of the soil surface by pasture, crop or weed material at the time of Diuron application should also be taken into consideration as it will impact the amount of Diuron that may come into contact with soil particles.

As an example, the western wheatbelt of NSW (west of the Newell Highway) is a low rainfall region with total in-crop rainfall of approximately 150 to 250 mm. At the time of Diuron applications in May to late June, 50 – 100% of the soil surface is likely to be covered by plant (crop, pasture or weed) material. The bulk of the herbicide is deposited on leaf surface and will be absorbed into the plants within six hours of application. The potential for Diuron to migrate overland in water is extremely low given the combination of low rainfall frequency and intensity of events, flatness of the landscape and soil surface plant cover.

The half-life of Diuron in the western wheatbelt of NSW has been estimated to be 75 days given the soil type and climate of the region. Considering the Diuron use patterns in the region there would be no significant herbicide residue remaining from a 250 to 500 g ac/ha (active ingredient per hectare) autumn application by the end of September. Importantly there would be no Diuron residue of significance in the soil during the summer thunderstorm period.

Studies used to assess Diuron risk to aquatic ecosystems must be in locations comparable to where Diuron is used in Australia. Equally, results from studies from Far North Queensland are unlikely to be valid in the farming systems in western NSW.

The age of data and its relevance to current use patterns must also be considered. Much of the data from monitoring in NSW waterways reported was collected in the 1990's. The most recent data reported from cotton regions is from 2005. In cotton regions the data shows a significant decrease in numbers of detections and levels found since 1999. The most recent data for south western irrigation areas is from 2004-2006. Data used to assess risk must reflect the likely situation given current use patterns. For example Diuron use patterns in cotton have changed markedly since most of the monitoring occurred due to the introduction of RoundUp Ready® Cotton.

3. Weed Control

Diuron has a vital role in integrated weed management programs. It has excellent efficacy on hard to kill weeds such as Capeweed, Spiny emex, Wild radish, Turnips and Mustards. These weeds must be managed, not only because of their economic importance to farmers, but because of the damage they can do to biodiversity if they are allowed to spread.

Alternatives to Diuron are either inferior in efficacy or much more expensive, which is a major problem in low rainfall environments like the wheatbelt of NSW. Additionally, as a pre-emergent, Diuron takes the pressure off herbicides such as MCPA, to which some weeds have resistance to. The availability of Diuron slows resistance development to other herbicides. Diuron is a particularly important tool in the management of resistant ryegrass.

Diuron is widely used in conjunction with MCPA to control weeds in cereal crops. MCPA, by itself, has very poor efficacy on Capeweed seedlings with a heart and Spiny emex. MCPA has extremely poor efficacy on Crassula, Cotula and Toad rush; a mix with Diuron is essential to control these weeds.

Legally, the growth and spread of noxious weeds such as Spiny emex must be controlled. It is a common and ferocious week in the NSW wheatbelt. Spiny emex can grow to nearly a metre across and high and uncontrolled will have a devastating impact on cereal yields (50% or more). The pods are also a contaminant in grain samples; >7 pods will result in rejection for export markets and are prohibited in seed lots.

Spiny emex is an intolerable weed for graziers as its spiny pods can cripple sheep and young cattle when they lodge between animals' claws. Wounds caused by the seed pods can become infected and painfully debilitating. Livestock with foot injuries are at risk of dehydration and death if they cannot walk to water sources. Suspending registrations of Diuron products will compromise animal health and welfare if Spiny emex cannot be controlled.

Dryland cotton farmers have reported that they grow dryland cotton in part because of the tremendous ability of weed control when Diuron is used at the beginning of a fallow prior to sowing RoundUp Ready® Cotton. Hard to kill summer and winter weeds are managed with this usage pattern and it keeps the weed seed low for at least a couple of years. Without Diuron weed management would be difficult.

An advantage of Diuron is the zero tillage aspect of weed control. Farmers do not want to resort to weed management through tillage as this leads to environmental concerns such as a loss of soil moisture, increased erosion, loss of nutrients and an increase in the use of diesel. Alternatives for control of weeds like Fleabane often include tillage.
There are fears amongst broadacre farmers that if approved rates of Diuron were radically reduced, it will no longer be efficacious and it will result in resistance in weeds of environmental and economic importance.

4. Use Patterns

Reported use patterns of Diuron for a number of industries is discussed below. Actual rates can differ from use patterns outlined in Table C3 on page 8 of the report.

These are examples of use patterns and not a definitive list.

4.1 Citrus

Rates reported for the use of Diuron in citrus equate to about 0.7 kg ac/ha. Growers are not applying a blanket application across the orchard, but spraying only under the skirt of the tree. The area actually sprayed for each hectare of orchard would be approximately 0.25 ha as the inter-row areas are not sprayed. For small trees, the area sprayed would be further reduced.

Normal orchard practice is to have grassed inter-rows. The grassed inter-rows minimises the risk of run-off.

4.2 Grains, Pulses and Pastures

Diuron use varies between grain growing areas in NSW, being more widely used in some areas.

Dryland farmers in the western wheatbelt of NSW use Diuron to control many species of weeds in winter cereal crops and lucerne pastures in the autumn months. It is applied post-emergent to cereal crops and pastures at 250 to 500 g ac/ha.

In cereals Diuron is commonly used in conjunction with MCPA as stated on the label of Diuron 900 DF in the NSW wheatbelt. Diuron/MCPA is used early post-emergence, but not in areas with higher probabilities of surface soil moisture logging in June/July.

Diuron is also used before wheat (with Roundup) as an incorporated by sowing herbicide application.

In pulses such as field peas, lupins, vetch, faba beans and chickpeas Diuron is either incorporated by sowing or post sowing pre-emergent at label rates. It is applied mostly to weed and plant free conditions.

Diuron is widely used in lucerne production. Rates are adjusted for lucerne varieties with lower dormancy ratings. Atrazine is used as an alternative or as a spike and any restrictions on the use of Diuron would increase the use of atrazine as no other alternatives exist.

Western graziers in NSW favour Diuron because of its efficacy on the common spectrum of weeds and it is soft on the lucerne, particularly newly sown seedling swards. Diuron is mostly applied to both the seedling and mature swards at 500 g ac/ha. It is occasionally applied at the rate of 1 kg ac/ha on problem grass weeds.

In the Central Tablelands region of NSW Diuron is used for spring weed control in lucerne at label rates. It is also used in grass seed crops (Tall fescue) when the grass goes dormant in summer. Diruon is one of the few selective weed control measures available and it is important to keep the weed seed bank low when vegetables are part of the crop rotation. Buffer zones are maintained between fields and riparian areas.

4.3 Cotton

Since the introduction of RoundUp Ready® Cotton the use of Diuron in irrigated cotton production has reduced markedly. The most widespread use pattern is now as a fallow herbicide for the control of winter and summer weeds, particularly Fleabane in the period preceding cotton planting. Applications normally occur around March/April at rates of 1.0 – 1.8 kg ac/ha. This is timed to coincide with cooler temperatures and the reduced likelihood of storm events. Diuron is also applied around August/September at a lower rate of 0.5 – 0.9 kg ac/ha. Rates for use in irrigation channels are a maximum of 6.6 kg ac/ha over a year as rates higher than this run the risk of damage to irrigated crops in subsequent years.

For dryland cropping cotton is normally part of a 3 to 5 year rotation, and is not grown back-to-back. This needs to be taken into account when assessing total environmental exposure to Diuron. The approved Diuron label rates for crops grown in rotation with cotton are less than those for cotton.

Diuron is a component of the most common cotton defoliant, Dropp UltraMAX, and is used at very low rates in this use pattern.

The cotton industry Best Management Practices (BMP) program is the Australian cotton industry's commitment to the world's best practice in cotton production. It provides guidelines on areas such as water management and pesticide management and runoff is carefully managed. As stated in the report there has been a significant decrease in numbers of detections and levels of Diuron found since 1999 in waterways in cotton regions. This coincides with the introduction of the BMP program.

5. Other Issues

There are environmental and crop compatibility concerns other than weed management associated with the proposed suspension of Diuron products.

5.1 Water Use

In western wheatbelt region of NSW rain water is a scarce resource. Alternative products to Diuron, such as bromoxynil and 2,4-DB require high quality water if efficacy is to be ensured. They also require high water rates of 100 L of rainfall quality water per hectare. Diuron can be used with as little as 50 L of dam water per hectare as it is not compromised by the clay particle suspension in dam water. Bromoxynil is mostly used in the eastern wheatbelt where there is greater availability of rainfall quality water.

5.2 Crop Compatibility

Diuron has a low drift risk and does not damage cotton or grapevines. Due to concerns of spray drift damage from phenoxy herbicides, their use in cereal crops has been restricted in recent years. As such farmers need alternatives to phenoxy herbicides for weed control.

5.3 Incorporation by Sowing

Methods of incorporation have improved significantly as we have gained more knowledge of soil movement and soil throw during sowing and planter technology and engineering has improved. A rough rule of thumb in most broadacre cropping scenarios is that every kilometre per hour increase in speed of the sowing rig with knife point and press wheels will require a 1 inch row width increase. For example a parallelogram planter with knife points and press wheels travelling at 12 km/hr on 12 inch row spacing will cause an ideal amount of soil throw during the incorporation by sowing so as not to throw Diuron treated soil into the adjacent seed row, rather throwing the treated soil into the inter-row where it is required to control weeds. As soon as the speed increases beyond this, there will be soil throw into the adjacent seed row, inhibiting crop seedling emergence and early crop vigour.

Conclusion

NSW Farmers opposes any broadscale blanket bans of Diuron. Risk to aquatic ecosystems must be assessed using sound evidence-based science and take into account:

- Farming system
- Climate including rainfall patterns
- Topography
- Actual use rates versus current label rates
- Spray technology
- BMP programs
- Proximity to sensitive aquatic ecosystems.

Blanket bans would unfairly impact some current users of Diuron, for example those in the wheatbelt of NSW. At the rates used in broadacre farming in NSW, together with typical low rainfall and a very short half-life, the risk of Diuron entering any waterway is considered to be very low. Data used to assess risk for Diuron use in crops such as cotton must reflect current use patterns and farming practices. It is not fair to users if bans are based on out-of-date data.

The responsible use of Diuron is critical for the control of weeds of economic and environmental importance.

Acknowledgement

NSW Farmers would like to thank agronomists working in the NSW wheatbelt and cotton regions and individual farmers for providing information on the use and fate of Diuron in their regions.