

break o'day catchment risk group

4 Bayview Avenue, Binalong Bay 7216 fax: 03 6376 1888 Email: sthelensmedc@vision.net.au

**Response to ASCHEM Council Recommendations -
Tasmanian Review of Aerial Spraying and Regulatory
Controls.**
**To Mr David Llewellyn - Minister for Primary Industry and
Water, Tasmania.**

The adoption of the recommendations determined by ASCHEM Council in 2006 raises some questions, as follows.

The numbers refer to those of the recommendations.

Quotes directly from the ASCHEM Council Recommendations are in quotation marks.

I would be grateful for answers to these questions an opinion on my comments and ask that my comments be recorded as part of our previous public comment on

“A Review of the Code of Practice of Aerial Spraying“ 2005,
by the Tasmanian Government.

Recommendation 1.

N.B. Control of use of pesticides is a State responsibility and this includes performance monitoring.

The statement “would apply limits on the extent of permissible off-site movement of pesticides that can be readily measured and enforced” implies that off-site movement of pesticides routinely occurs and is permissible.

- a) What is the definition of “permissible” in this context?
- b) How is this “limit setting” going to happen in practice and what methods will you use?
- c) What limits are applied to the off-site movement of pesticides that are not readily measured e.g. alpha-cypermethrin?
- d) In what way is the issue of trade risk i.e. zero threshold for contamination of animal or crops by pesticides for export, protected by this recommendation?

e) What post-registration monitoring system will be put in place to determine predictions made in risk assessments?

Recommendation 2.

- a) What are the definitions of “ minor or technical offences”?
- b) Who actually makes these definitions?
- c) How will these offences be identified in actual practice?
- d) What action will then be taken?

Recommendation 3.

“The standards will be applied at or downstream of the first off-take of water for human consumption”.

This recommendation does not make clear whether the standards apply to all drinking water.

- a) Is this all human consumption e.g. individual house supplies or does this apply only to water intakes by water bodies?

Pesticides should not be detected in drinking water, as endorsed by the Australian Drinking Water Guidelines - ADWG 2004.

Currently pesticide contamination is investigated when the pesticide residue in drinking water is above the guideline value. It should be investigated when it is found above the detection limit as stated in the ADWG.

The ANZECC Guidelines 2000 underpin the ADWG and those for Fresh and Marine Water Quality. They have been adopted as the State Water Policy Act 1997 and as such are part of our legislation.

- b) Why are these guidelines not being fully implemented in Tasmania?

For instance there are clear instructions in the ANZECC guidelines on how to check for the possible contamination of water from mixtures of chemicals including pesticides. They detail that several toxicity tests should be undertaken and that reliance should not be placed upon individual pesticide testing. The effect of excipients and other endocrine disrupting chemicals such as synthetic oestrogens can then be included in chemicals being screened for in baseline monitoring. Currently in Tasmania there is no routine testing for pesticide degradation products or sediments for water

insoluble pesticides. The ADWG also states that a preventative risk management approach should be undertaken in catchments where industry and pesticide use occurs and drinking water is taken from the catchment, and less reliance should be placed on individual chemical monitoring. This approach urgently needs to occur for drinking water catchments in Tasmania. The ADWG and ANZECC guidelines are also quite explicit with regard to baseline and subsequent monitoring in catchments.

Recommendation 4.

This recommendation does not provide all that is required to adequately protect aquatic environments

The ANZECC guidelines are quite explicit as to how fresh and marine waters should be regarded. Catchments should have risk assessments when determining what industries and chemicals are to be allowed in them. Monitoring individual pesticide residues in water and then investigating only after trigger values are found is not acting within the ANZECC guidelines and has the potential to compromise water quality. For example extensive work has been undertaken regarding atrazine (APVMA 1997 and 2002). Atrazine has been shown to persist in Tasmanian groundwater with a half-life of approximately 213 days and its persistence (degradation products and non-extractable residues) adds considerably to its potential adverse impact. The major metabolites of atrazine, which are also toxic, may make up approximately 50% of the total atrazine-derived triazine compounds in some ground and surface waters. It has been shown to persist in soil for nine years after spray events. Davies 1994 showed atrazine contamination in a stream following aerial spraying 16 months previously.

Control of pesticide usage including control of aerial spraying, needs to take these factors into account. The PIRI tool is an adjunct to appropriate risk assessment for catchments and has not as yet been calibrated for Tasmanian conditions.

A comprehensive monitoring program should include biological monitoring of organisms and ecosystems.

“The application of pesticides should not cause serious or material environmental harm”.

a) What is the process for this statement’s evaluation, and on what principles is it based?

Note should be taken of the comments made in “Pesticide use in Australia” ATSE 2002. They stated that little is known of the effects of pesticides on native species in their natural habitat and that the effects of short-term pulses of many pesticides are not well understood. The subtle effects of pesticides on the environment are unknown.

b) Why does Tasmania feel it needs to have trigger values that differ from the ANZECC guidelines for the upper catchments of rivers?

The high conservation areas require to be protected by having 99% trigger values as per ANZECC guidelines. The trigger values proposed by ASCHEM for atrazine and simazine should only be for moderately disturbed ecosystems and should not be used to downgrade pristine areas.

Appropriate risk assessments of catchments should be mandatory if water is being taken and sold for human consumption.

Independent water monitoring should be undertaken on request by a landowner. (AMA media release February 2005).

Recommendation 5.

a) How are the Agricultural and Veterinary Chemicals Control of Use Act 1995 going to be enacted and enforced?

Recommendation 6.

The regulations state that the outcomes based model is determined by “whether or not a person’s spraying activities adversely affect human health, agricultural stock or produce or the environment”.

a) This is commendable but how is the model going to work in actual practice i.e. what is the method?

There is no mandatory adverse incident reporting or long-term health or environmental monitoring occurring. There has been no risk assessment of long-term exposure of bystanders or rural

residents to pesticide spray drift. There have been no studies on representative communities for biomarkers to measure exposure to pesticides. Furthermore, with no post-registration monitoring system in place there can be no confirmation whether the predictions made in assessments of catchments regarding pesticides are accurate. These comments also apply nationally. Exclusion zones of 10m for waterways with aerial application of pesticides at a release height of 15 metres above treetop height will not provide pesticide free waterways. In 1993 Davies recommended 50 m buffer zones for aerial spraying to try and decrease significant stream contamination. Kookana stated that the long-term effectiveness of buffer strips in trapping pesticide contamination is still unclear. Exclusion zones of only 100 m for crèches and schools is highly dangerous and potentially criminal in the light of current scientific evidence of potential harm from pesticides. (Can you please clarify whether this zone applies from the perimeter of the school grounds or the buildings themselves?) Comprehensive monitoring as per ANZECC guidelines with results accessible in the public domain is essential for any public trust in the system.

The onus of proof should not be on an individual or a landowner to produce evidence of an adverse impact event, but on the producer and user to show that no off-site pesticide contamination or harm as a consequence has occurred.

Recommendation 7.

This recommendation is at variance with the requirements for performance monitoring.

- a) If there is to be no mandatory pre-spray notification to the government, how can appropriate monitoring be implemented?
- b) What are the “less costly means” with regard to “benefits” referred to in para 2?

Risk assessment of catchments with mixed industries including aquaculture should include details of pesticide usage, i.e. which products, where and when they are applied and total application for the year. They should also include industry, local Council and domestic pesticide use. This information must be available to

water bodies, the public, and industries impacted by potential pesticide contamination to allow them to undertake appropriate action (e.g. risk management plans) including independent monitoring programs.

Information for aerial and ground based applications should be integrated for the above purposes.

Recommendation 8.

This recommendation does not adequately protect the general public.

Mandatory neighbour and other residents' notification should continue with written notification of at least a fortnight prior to a spray event so as to enable the implementation of risk management plans. Furthermore, the current two-day notification is insufficient for those with health problems which may be aggravated by spraying and who may have to leave their property. The proposed exclusion zone and notification approach clearly benefits the pesticide applicators, and deny adjacent landowners their natural rights to clean air, water and non-contamination of their property.

It also puts in jeopardy the export trade market with a requirement for zero pesticide residues. (Cf. recommendation 1 and comments.)

Recommendation 9.

Agreed that agricultural aircraft operators and property managers should keep accurate and detailed spraying records and that this should include GPS records.

Recommendation 10.

The Tasmanian Agricultural Productivity Group should determine whether or not to continue with the paddock numbering system standard, provided they meet compliance standards.

Recommendation 11.

The decision whether or not to continue with indemnity insurance should be left to the National Product Safety and Integrity Committee. However landholders or persons who suffer off target repercussions must be able to be adequately recompensed. Aerial spray applicators (i.e. pilots) should have a national register to provide evidence of competency with regard to pesticide application. APVMA control access to pesticides, but there is no legislative requirement regarding national competency or education certification by the applicator/user as to how to use them. Licensing should be conditional on complying with continuing professional education. (N.B. Department of Agriculture, Fisheries and Forestry were approached by the aeronautical industry in 2001 to allow for national certification: - comments made at the APVMA Spray Drift Forum, Canberra, 16th August 2006.)

a) What avenues are DPIW making to address these issues?

Recommendation 12.

Agreed that property owners should remain responsible for spray plans and ensuring that spraying contractors understand these and adhere to them.

Recommendation 13.

Leaving the industries to develop documentation and advise on best practice is self-regulation and is unacceptable given the current risks to human health and the environment. Standards should be developed as part of the regulatory framework. (Cf. Recommendation 1)

Recommendation 14.

The Spray Investigation and Referral Unit should continue to provide advice regarding pesticides in the application of legislation. It should do this objectively, and react promptly and consistently to all contacts requiring information. It should be subject to performance auditing.

Alison Bleaney OBE
Secretary BODCRGp

18 August 2006

References

Operating Principles and Proposed Registration Requirements in Relation to Spray Drift Risk: (third draft), Australian Pesticides and Veterinary Medicine Authority (APVMA), 24th July 2006.

Pesticide Use in Australia: Australian Academy of Technological Sciences and Engineering, 2002.

Water Quality a Major Public Health Issue: Press release - Federal AMA, Public Health Committee, February 2005.

Blundell T: Royal Commission on Environmental Pollution UK-Crop Spraying and Health of Residents and Bystanders. September 2005.

Weston DP et al: Distribution and toxicity of sediment associated pesticides in agriculture dominated water bodies of California's Central Valley. Environmental Science and Technology, 38 (10) p2752-2759, 2004.

Weston DP et al: Aquatic toxicity due to residential use of pyrethroid insecticides. Environmental Science and Technology, 39 (24) p9778-9784, 2005.

Marino D et al: Cypermethrin and Chlorpyrifos Concentration Levels in Surface Water Bodies of the Pampa Ondulada, Argentina. Bulletin of Environmental Contamination and Toxicology, 75, p820-826, 2005.

Ward HW et al: Proximity to Crops and Residential Exposure to Agricultural Herbicides in Iowa. Environmental Health Perspectives, 114; p 893-897, 2006.

Davies PE et al: Triazine Herbicide Contamination of Tasmanian Streams: Sources Concentrations and Effects on Biota. Australian Journal of Freshwater Research, 45,209-26, 1994.

Ontario College of Family Physicians; Pesticide Literature Review. 1992 to 2004.

www.ourstolenfuture.org

Repetto R, Baliga SS: Pesticides and the Immune System: The Public Health Risks. World Resources Institute, March 1996.

Porta M: Persistent Organic Pollutants and the Burden of Diabetes. *Lancet*, Vol 368, August 2006.

EERC- Led Study Addresses Critical Potential Public Health Risks Related Exposure, July 2006.

Aksglaede L, Juul A et al: The sensitivity of the child to sex steroids: possible impact of exogenous oestrogens. *Human Reproduction Update*, Vol 12, No 4, p341-349, May 2006.

Ascherio A et al: Pesticide Exposure and Risk for Parkinson's Disease. *Annals of Neurology*, Vol 60, issue 2, p197-203, June 2006.

Flower KB et al: Cancer risk and parental pesticide application in children of Agricultural Health Study participants. *Environmental Health Perspectives*, 112, p631-635, April 2004.

Hartge P et al: Residential Herbicide Use and Risk of Non-Hodgkin's Lymphoma. *Cancer Epidemiology Biomarkers and Prevention*, 14: 934-937, April 2005.

Hood E: Passing along pesticides: Lymphoma rises in children of applicators. *Environmental Health Perspectives* 112, April 2004.

Birnbaum LS, Fenton SE: Cancer and Developmental Exposure to Endocrine Disruptors. *Environmental Health Perspectives*, Vol 111, No 4, April 2003.

Pollak J: *The Toxicity of Chemical Mixtures*, Sydney: Centre for Human Aspects of Science and Technology, 1993.

Hayes TB et al: Pesticide mixtures, endocrine disruption, and amphibian declines: are we underestimating the impact? *Environmental Health Perspectives*, 114 (suppl 1):40-50; doi:10.1289/ehp.8051, January 2006.

Computational Approach to the Toxicity Assessment of Mixtures (CATAM).
2006a. A computational framework for assessing the toxicity of chemical mixtures,
July 2006.

Computational Approach to the Toxicity Assessment of Mixtures (CATAM).
2006b. Hazard calculator, July 2006.

Richard S, Moslemi S et al: Differential Effects of Glyphosate and Roundup on
Human Placental Cells and Aromatase. *Environmental Health Perspectives*, Vol 113,
June 2005.

Calabrese EJ: Toxicological awakenings: the rebirth of hormesis as a central pillar of
toxicology. *Toxicology and Applied to Pharmacology*, Nov 2004.

Crews D, McLachlan JA: Genetic Pollution, Evolution, Endocrine Disruption
Health, and Disease. *Endocrinology* 147(6) 2006.

Weinhold B: Epigenetics. *Environmental Health Perspectives*, Vol 114, March
2006.

Anway MD, Cupp AS et al: Epigenetic Transgeneration Actions of Endocrine
Disrupters and Male Fertility. *Science*, 308, p1466-1469, 2005.

Crinnion WJ: Environmental Medicine, Part 1-The Human Burden of
Environmental Toxins and their Common Health Effects. *Alt. Medical Review* 5:52-
63, Jan 2000.

University of Liverpool-Press Release; Environmental Chemicals Implicated in
Cancer. (Professor V Howard, J Newby) - *Journal of Nutritional and Environmental
Medicine*, 2006.