

# MINUTES

Conservation Advisory Committee

## MINUTES OF THE CONSERVATION ADVISORY COMMITTEE MEETING

HELD ON

MEETING DATE

**WEDNESDAY, 26 SEPTEMBER 2007**

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City of  
Joondalup

## CITY OF JOONDALUP

### MINUTES OF THE CONSERVATION ADVISORY COMMITTEE MEETING HELD IN CONFERENCE ROOM 2, JOONDALUP CIVIC CENTRE, BOAS AVENUE, JOONDALUP ON WEDNESDAY, 26 SEPTEMBER 2007.

#### ATTENDANCE

##### Committee Members:

Cr Steve Magyar	Presiding Person
Cr Michele John	<i>from 1905 hrs</i>
Cr Brian Corr	<i>from 1905 hrs</i>
Cr Sue Hart	
Cr Marie Macdonald	
Mrs Marilyn Zakrevsky	Deputy Presiding Person
Mr Ralph Henderson	
Mr Barry Fitzsimmons	
Ms Phyllis Robertson	
Dr Marjorie Apthorpe	<i>from 1810 hrs</i>
Mr John Chester	

##### Officers:

Mr Murray Ralph	Manager, Infrastructure Management
Mr K Armstrong	Coordinator, Conservation Services
Mrs J Hewison	Administrative Secretary

#### DECLARATION OF OPENING

The Presiding Person declared the meeting open at 1805 hrs.

#### APOLOGIES/LEAVE OF ABSENCE

Mrs Wendy Herbert  
Ms Alice Stubber

#### CONFIRMATION OF MINUTES

MINUTES OF THE CONSERVATION ADVISORY COMMITTEE MEETING HELD ON 29 AUGUST 2007

**MOVED Mr Barry Fitzsimmons, SECONDED Mr Ralph Henderson that the minutes of the meeting of the Conservation Advisory Committee held on 29 August 2007 be confirmed as a true and correct record.**

**The Motion was Put and**

**CARRIED (8/0)**

**In favour of the motion:** Crs Magyar, Hart & Macdonald, Mr J Chester, Mrs M Zakrevsky, Mr B Fitzsimmons, Mr R Henderson, Ms P Robertson

*Dr Apthorpe entered the Room at 1810 hrs.*

### **ANNOUNCEMENTS BY THE PRESIDING PERSON WITHOUT DISCUSSION**

The Presiding Person advised that this may be his last meeting as Chairperson of the Conservation Advisory Committee and he thanked all the community members and Elected Members for their enthusiastic input over the past 18 months and thanked the staff for their support to the Committee.

### **DECLARATIONS OF INTEREST**

Nil.

### **IDENTIFICATION OF MATTERS FOR WHICH THE MEETING MAY SIT BEHIND CLOSED DOORS**

Nil.

### **PETITIONS AND DEPUTATIONS**

Nil.

### **REPORTS**

#### **ITEM 1                      CJ170-08/07      THERMAL WEED CONTROL -                                          [02082]**

**WARD:**                      All

**RESPONSIBLE**              Mr David Djulbic  
**DIRECTOR:**                Infrastructure Services

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### **PURPOSE/EXECUTIVE SUMMARY**

To present the report on Thermal Weed Control to the Conservation Advisory Committee for comment.

### **BACKGROUND**

At its meeting on 28 August 2007, Council resolved (*CJ170-08/07 refers*), inter alia, to:

*“Refers the report on Thermal Weed Control in the City of Joondalup to the Conservation Advisory Committee and the Sustainability Advisory Committee for comment”*

This report seeks to address the request outlined in the abovementioned recommendation.

The consideration of thermal weed control arose from a 137-signature petition which was presented to Council in May requesting the use of hydrothermal weed control technology instead of chemical spraying wherever possible and requesting a report being presented to Council on this matter.

It should be noted that Local Governments have the responsibility to control weed growth on land they manage. In some cases this extends to the control of noxious weeds which are required to be controlled by law. These requirements form part of the operational maintenance tasks associated with road and land management. The City of Joondalup currently controls weed growth in a range of locations including pathways, road verges/medians, public gardens, grassed parkland and bushland. Weeds in the main are controlled using a range of chemical based herbicides with a lesser amount being removed by hand or mechanical methods. This work is undertaken using Council work teams, contractors, and in natural areas volunteers assist the City with this work.

## **DETAILS**

The City commissioned a report to be written by John Banks (Arboriculturist) and Graeme Sandral (Agronomist).

The brief for the compilation of the report sought the following analyses:

- Compare the cost of herbicide based weed control and thermal based weed control;
- Examine the advantages and disadvantages of both methods;
- Identify the most suitable circumstances for the use of these technologies.

The following is a summary of the main findings contained within the report which is found at Attachment 1:

*“As a generalisation, herbicides are more cost effective and its use achieves better kill rates than thermal weed control methods. The cost advantages and speed of application associated with herbicides indicate that they are suitable for large-scale operations;*

*Thermal weed control methods are best utilised where environmental or health issues are significant and where off site damage to non-target plants is a high risk. The costs and speed at which thermal weed control can be undertaken may limit its scale of operation. Weed control efficiency is improved if the frequency of thermal weed control is no longer than six weeks apart and, where there is an occurrence of perennial weeds which are hard to kill, hand weeding or herbicide spot spraying may be necessary on second cycle treatments.”*

## **Issues and options considered:**

The City has a number of options it may choose to take:

- 1 Undertake all weed control using chemical and mechanical methods (hand weeding).
- 2 Use a combination of chemical, thermal weed and mechanical control. Using each technology where appropriate.
- 3 Use thermal and mechanical weed control methods only.

**Link to Strategic Plan:**

Key Focus Area

Caring for the environment.

**Outcomes**

The City is environmentally responsible in its activities.

**Legislation – Statutory Provisions:**

Control of declared noxious weeds – Division 3, Section 42 – Agriculture and Related Resources Protection Act 1976.

**Risk Management considerations:**

Not Applicable.

**Financial/Budget Implications:**

The report outcomes indicate that the cost of thermal weed control relative to traditional herbicide methods is up to 2 times more expensive per treatment, and the kill rate on some perennial weeds will be lower. When translating this into yearly weed control the thermal treatment will require 1.5 to 2 times more applications as compared with herbicide control. Therefore, on a yearly basis the additional cost of the thermal weed control treatment may be up to 3 to 4 times more expensive than herbicide application. This is due to the higher cost per application and the higher number of applications required to achieve the same results. The City's expenditure for weed control for the last 3 contractual periods is on average \$460,000 per annum for weed control external to natural areas.

**Policy implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability implications:**

Not Applicable.

**Consultation**

Council is seeking input on the consultant's report from relevant advisory committees.

**COMMENT**

Not Applicable.

**ATTACHMENTS**

Attachment 1                      Report on Weed Control Using Hot Water / Steam and Herbicides in the City of Joondalup

**VOTING REQUIREMENTS**

Simple Majority.

**OFFICER'S RECOMMENDATION**

That the Conservation Advisory Committee NOTES the report on Thermal Weed Control shown as Attachment 1 and provides comment to Council on the report.

The Coordinator, Conservation Services gave an overview of the Report. Discussion ensued.

*Cr John and Cr Corr entered the Room at 1905 hrs.*

**MOVED Dr Apthorpe, SECONDED Cr Magyar that the Conservation Advisory Committee:**

**1 provides the following comments to Council on the Thermal Weed Control report:**

- (a) RECOMMENDS that Council develops a Weed Control Strategy as part of its Environmental Plan, the Weed Control Strategy should be based on the principles of Integrated Weed Management, which includes the aim of reducing the reliance on herbicides;**
- (b) REQUESTS that the City of Joondalup commission a properly conducted local trial of the effectiveness of hydrothermal weed control on a variety of locations/weed types to be carried out by an independent NATA-certified or equivalent testing laboratory;**
- (c) REQUESTS cost comparisons between hydrothermal weed control and herbicide weed control to be calculated to take into account not just the cost per day of each method, but long-term costs such as increasing weed tolerance to herbicides, environmental damage and damage to human health;**
- (d) REQUESTS a target date no greater than two (2) years is set from now for final adoption of a weed control strategy;**

- 2 **REQUESTS** that enquiries be made of other West Australian local authorities using hydrothermal weed control for any information they may have;
- 3 **REQUESTS** reports documented at points 1 (a) and (b) come back to the Conservation Advisory Committee for comment prior to presentation to Council;
- 4 **SUBMITS** the following attachments to assist Council in developing its weed control strategy:
  - **Pesticides and Human Health – March – April 2005 Canadian Journal of Public Health (Appendix 1 refers)**
  - **Institute of Science in Society – Glyphosate Toxic & Roundup Worse (Appendix 2 refers)**
  - **Amitrole CAS No. 61-82-5 (Appendix 3 refers)**
  - **Document to be provided by Cr John**
  - **Comparison of three weed control methods: chemical, flame and hot water (Appendix 4 refers)**
  - **Environment Matters (Appendix 5 refers)**
- 5 **ADVISES** Council that the Conservation Advisory Committee believes there are substantial benefits in bringing weed control management back inhouse.

**The Motion was Put and**

**CARRIED (11/0)**

**In favour of the Motion:** Crs Magyar, Macdonald, John, Hart & Corr, Mr J Chester, Mrs M Zakrevsky, Mr B Fitzsimmons, Mr R Henderson, Ms P Roberson, Dr M Apthorpe

#### **MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN**

Nil.

#### **REQUESTS FOR REPORTS FOR FUTURE CONSIDERATION**

Nil.

#### **CLOSURE**

There being no further business, the Presiding Person declared the Meeting closed at 2004 hrs; the following committee members being present at that time:

Cr Steve Magyar  
Cr Marie Macdonald  
Cr Sue Hart  
Cr Michele John  
Cr Brian Corr  
Mrs Marilyn Zakrevsky  
Mr Ralph Henderson  
Mr Barry Fitzsimmons  
Ms Phyllis Robertson  
Dr Marjorie Apthorpe  
Mr John Chester

PESTICIDES AND HUMAN HEALTH - MARCH - APRIL 2005 CANADIAN  
JOURNAL OF PUBLIC HEALTH, page 89-92  
REVUE CANADIENNE DE SANTÉ PUBLIQUE VOLUME 96, NO. 2

COMMENTARY - Pesticides and Human Health - Why Public Health Officials Should  
Support a Ban on Non-essential Residential Use Neil Arya, BSc, MD, CCFP, FCFP

#### ABSTRACT

The College of Family Physicians of Ontario recently released a comprehensive report on pesticide exposure and health risk, concluding that various pesticides had adverse health effects. The pesticide industry says that pesticides are "safe" when used as directed because they are studied and approved by governmental agencies. Yet many municipalities, including Canada's three largest, and the province of Quebec have enacted bans on cosmetic use of pesticides, largely in response to health concerns. Reviewing the report, the status of regulation of pesticides and the limitations of studies and of regulation in Canada, it appears that on the basis of evidence available to date, public health officials should support a ban on cosmetic use of pesticides.

MeSH terms: Pesticides; environmental health; public health; legislation; Canada; toxicity

#### RÉSUMÉ

Le Collège des médecins de famille de l'Ontario a récemment publié un rapport détaillé sur l'exposition aux pesticides et sur les risques sur la santé qui concluait que divers pesticides avaient des effets nocifs pour la santé. L'industrie des pesticides maintient que les pesticides sont « sécuritaires » lorsqu'utilisés selon les instructions, car ils sont étudiés et approuvés par les agences gouvernementales. Pourtant, plusieurs municipalités, dont les trois plus grandes au Canada, et la province de Québec ont décrété des interdictions sur l'usage cosmétique des pesticides, principalement en réponse aux inquiétudes sur la santé. En révisant le rapport, le statut de la réglementation sur les pesticides et les limites des études et de la réglementation au Canada, il semble qu'en se basant sur les preuves disponibles jusqu'à aujourd'hui, les responsables de la santé publique devraient se déclarer en faveur d'une interdiction de l'usage des pesticides à des fins purement cosmétiques.

The College of Family Physicians of Ontario has recently released a comprehensive review of health effects of pesticides.<sup>1</sup> The Toronto Board of Health, which did a major review on health effects,<sup>2</sup> led the effort to achieve a bylaw. Toronto, Montreal, Halifax and Vancouver each have instituted phased-in bans on non-essential, residential use of pesticides within the last four years.<sup>3-5</sup> In Quebec, after a number of individual municipalities passed their own by-laws, the government introduced a province-wide Pesticides Management Code 6 in 2003, severely limiting the sale and use of most commonly used lawn and garden pesticides. Such actions compel consideration of the general question of what role health professionals, and in particular those in public health, should take on the issue of bans on pesticide use.



### History

Pesticides, as the name 'cide' implies, are killers - that is, they are meant to selectively kill organisms we consider undesirable. As such, they are analogous to chemotherapeutic agents or antibiotics. Historically, pesticides included heavy metals such as arsenic, lead and mercury and plant derivatives such as nicotine from tobacco leaves, pyrethrum from chrysanthemum flowers and rotenone from the derris root. Synthetic pesticides were developed in the 20th century, frequently for use in warfare - a historical reality that underlines their toxicity.

Their use has broadened and now pesticides have become ubiquitous in our environment. Groundwater tests have revealed that our drinking water may contain residues of up to 39 different pesticides. Peaches, apples, pears and grapes and even breastmilk and meconium 8 contain residues of a variety of pesticides. Seventy percent of pesticides are used in agriculture. The remaining thirty percent are applied in a wide range of human activities including forest management, lawn and garden, golf course maintenance, pet care, industrial site care, as repellents, and for indoor pest management such as in washrooms, closets and building structures.

### Health effects and vulnerable groups

The acute adverse human health effects of insecticides, including neurological, gastrointestinal, dermatological and respiratory manifestations, and even heart block, coma and death, are primarily linked to acetylcholine blockade. The WHO estimates that pesticides annually poison up to 3,000,000 people worldwide with 200,000 deaths 9 primarily due to accidental exposure or intentional ingestion. With notable exceptions, such as paraquat, a severe respiratory toxin, herbicides generally have little acute toxicity.

Chronic effects are more difficult to demonstrate. Rachel Carson's influential *Silent Spring* (1962) was the first major work to demonstrate more chronic problems (an increase in Non Hodgkin's lymphoma in agricultural areas). 10 Certain groups are more vulnerable to effects of pesticides than others. Increased use puts farmers and their families, gardeners and golf course superintendents at higher health risk.

Children, fetuses, the elderly and pets may have a biological vulnerability. Relative to their weight, children eat more, drink more, breathe more and have a greater surface area and a more permeable blood brain barrier than adults do. In addition, they may have greater exposure due to diets more concentrated in specific foods and more hand-mouth behaviour, including eating soil. They spend hours in areas of highest concentrations of pesticides - on the ground (floor, grass), often with little clothing. Finally, children (and pets) cannot read warning labels or instructions.

### Pesticide Review OCFP Report 11 - Method

The College of Family Physicians of Ontario, concerned that published reviews and

studies which led to ultimate government approval were not adequately systematic or comprehensive and that many studies showing harm or safety were poorly conducted, chose to critically evaluate this body of work. Led by academic physicians from three Ontario medical schools, a team from the College examined peer-reviewed works from 1992 to 2003 in English, French, Spanish and Portuguese, initially surveying Medline and CancerLit and other language databases. Beginning with over 12,000 studies, they then filtered out the extensive literature concerning organochlorines, which are already banned, as well as those with poor or uncertain methodology. This provided a dataset of 30 high-quality reviews and over 250 well-done primary studies (100 cancer and 150 non-cancer) on which the reviewers performed detailed analysis.

## Results

Triazine herbicides were found to be associated with increased breast cancer risk; phenoxy herbicides and carbamates with increased lung cancer risk; while the indoor use of insecticides was linked to brain cancer (including astrocytomas and gliomas) and acute lymphocytic leukemia in children. Exposure to pesticides in the home and garden during pregnancy increased the risk of childhood acute lymphocytic leukemia. Even offspring of occupationally exposed men had higher rates of kidney cancer. Six pesticides, including 2,4-D and Dicamba, were associated with increased time to pregnancy and pyrethrins with delayed, chronic neurological effects (Parkinson's disease), chromosome aberrations, rashes in licenced pet pesticide applicators, and fetal intrauterine growth retardation (UGR). Fungicide exposure had positive association with dermatitis. The herbicides, glyphosate and glufosinate, were associated with congenital malformations. Parkinson's disease and possibly amyotrophic lateral sclerosis (ALS) and Alzheimer's disease in men (one study only for each of the last two), all were linked to long-term pesticide exposure. Despite evidence of toxicity to the developing nervous system, only two studies were undertaken on adverse neurological effects in children, but both demonstrated significant reasons for concern. Included here was the justifiably well-known work of anthropologist Elizabeth Guillelte.<sup>12</sup> Especially impressive was Hardell and Erikson's 2003 study of the decline in non-Hodgkin's lymphoma in countries where the herbicide 2,4-D had been banned for over ten years. The authors concluded that 5% of NHL is attributable to pesticide exposure.<sup>13</sup>

No clear link of any harm to the fetus was found when pregnant women used the insect repellent DEET during the second and third trimesters of pregnancy.

The final conclusion, i.e., that exposure to all commonly used pesticides (phenoxy-herbicides, organophosphates, carbamates and pyrethrins) has shown positive association with adverse health effects, made headlines throughout North America.<sup>14-16</sup>

## Response of the Pesticide Industry

Since the pesticide industry is worth \$30 billion (US) <sup>17</sup> worldwide, such a startling conclusion could not go unchallenged. The pesticide industry claims that pesticides

reduced cancer rates by introducing more fruits and vegetables into the North American diet.<sup>18</sup> Unsupported by medical evidence, proponents further assert that pesticides are necessary for children who are susceptible to allergies such as ragweed, and asthma and to control infections such as West Nile disease.<sup>19</sup>

The Report has been criticized as having family doctors who were less knowledgeable, and possibly biased, as principal investigators. The evaluative team's expertise was far greater: also included were a community medicine professor/epidemiologist, an MD, MPH, PhD environmental epidemiologist, and reviewers including a PhD specializing in systematic reviews who consulted, a research/clinical oncologist at the Mayo Clinic who reviewed the cancer chapters, a genetics researcher at Sick Kids who reviewed the genotoxicology chapter, a PhD in reproductive epidemiology who worked on the reproduction chapter, a PhD student in environmental epidemiology, and two community medicine residents. (Personal communication, Margaret Sanborn, project leader, September 21, 2004.) The industry has felt compelled to respond with legal threats and to launch its own presumably unbiased reviews in response. Deserving closer scrutiny and consideration is the claim by Lorne Hepworth, President of CropLife Canada: "It (the Report) ignores the fact that Health Canada regulates all pest control products manufactured and sold in Canada, and that the products are subject to some of the toughest regulatory standards in the world."<sup>20</sup>

Who regulates the use of pesticides and how?

In general, all three levels of government are involved in the regulation of pesticides. The federal government is responsible for product safety, approval and label requirements; the provinces for the sale and handling of products and licensing applicators; and municipalities for development of bylaws regulating use on public and private land. How has each chosen to act?

In 1991, Hudson, Quebec became the first Canadian jurisdiction to ban the use of pesticides for cosmetic purposes on both public and private property. The bylaw withstood a Supreme Court challenge in 2001. Using its mandate to regulate sales, the province of Quebec adopted a Pesticides Management Code in 2003, prohibiting the sale of such products as 2,4-D, MCPA and combination pesticide and fertilizer products. It further prohibited the use of pesticides inside and in proximity to day-care centres, schools and summer camps, citing the heightened vulnerability of children. By 2008, domestic use products will only be distributed in Quebec stores via special access shelving inaccessible to the public except by permit. But it is the federal government that tests and licenses products and whose approval industry cites to support safety of their products. Is that regulation sufficient protection?

The federal government's Pest Management Regulatory Agency (PMRA) was established in 1995 to act as a branch of Health Canada.<sup>21</sup> Mandated to protect human health and the environment, the PMRA also assumed the regulation of pesticides through the administration of the Pest Control Products Act (PCPA).<sup>22</sup>

## Problems with monitoring

Monitoring by the PMRA has been hampered by limited resources. Prospective studies are very expensive. Randomization would be difficult if not impossible for most exposures, and in any case would be unethical, at least in humans. Studies are often conducted using a single chemical exposure on healthy adult male humans or other animal models. Industry often conducts its own studies, employing a standardized, but scientifically unproven product safety factor meant to provide for differences between animals and people, and between different types of people. Table I details some problems with this approach. Other epidemiological methods have their own problems. Ecological studies are indirect, relying on limiting factors such as type of crop or job description, and may have no true control group. Case control studies may be flawed due to recall bias, low participation or sample size, and loss to follow up.

As has become clear in the last few decades, government approval is no guarantee of safety. Lead, mercury, PCBs and asbestos are only a few of the substances that have received government approval in the past, and have resulted in tremendous ecosystem damage, severe health problems, massive cleanup operations and sizeable legal bills. Previously approved pharmaceutical drugs are recalled on a monthly basis.

Over the years, pesticides have regularly been removed from the market because of unacceptably toxic effects. The US Environmental Protection Agency (EPA) considers many organochlorines (the earliest synthetic pesticides) including DDT to be probable carcinogens.<sup>23</sup> In the last few years, some organophosphates such as Dursban (chlorpyrifos), Diazinon, methyl parathion and azinphos methyl used to control insects and grub worms,<sup>24</sup> have all been subject to a 'voluntary' phaseout by the EPA. And in Canada, as recently as May 2004, producers voluntarily removed the racemic form of mecoprop, a herbicide found in many weed killers for home use, after learning it was about to be banned or restricted.

The PMRA felt compelled to respond to the College Report. "The PMRA agrees with the recommendation of the OCFP report that Canadians can and should seek opportunities to minimise their exposure to and reduce their reliance on pesticides. As such, the PMRA supports Integrated Pest Management (IPM) practices. IPM is an approach that combines biological, cultural, physical and chemical tools to manage pests so that benefits of pest control are maximized and health and environmental risks are minimized."<sup>25</sup>

Is legislation practical or necessary?

Should we not just continue with a harm reduction strategy involving IPM and education alone, and is a ban really practical? A global study showed that education campaigns alone have not resulted in a significant decrease in pesticide use.<sup>27</sup> Since 1990, the City of Waterloo, Ontario's Plant Health Care Programme<sup>28</sup> achieved a 99% reduction in pesticide use, showing that a general ban on city property was practical.

Physicians are taught "primum non nocere" ("first of all, do no harm").

Environmentalists seek the same basic protection for the ecosystems on which we depend for survival - i.e., the Precautionary Principle.<sup>29</sup> It is increasingly accepted in both the public and private sectors that the obligation should not be on citizens and their representatives to demonstrate harm, but rather on those introducing new products to society to prove not only that the products themselves are safe, but that clean production processes are used with insignificant discharge of foreign, noxious substances. This is known as the 'Reverse Onus'.<sup>30</sup> These conditions are not met by currently used pesticides.

While an argument could be made for the selective use of pesticides to deal with outbreaks, agricultural use or spot application for infestations, this is distinct from the undifferentiated, widespread use we are witnessing today. The benefits of permitting cosmetic pesticide use cannot be justified by the risk to public health.

## CONCLUSION

It seems we are already past a tipping point. Political will is finally being mobilized regarding cosmetic pesticide use, with Canada's three largest cities already having passed restrictive bylaws, and with the province of Quebec and municipalities in all parts of the country also acting forcefully to limit use. Even prior to this report, the House of Commons Standing Committee on Environment and Sustainable Development report <sup>31</sup> stated: "Given what is known or suspected about the harmful effects of these products and given the purely esthetic purposes they serve, the Committee favours a ban on the use of pesticides for cosmetic purposes", adding that "Hopefully, the use of pesticides for cosmetic purposes will become as frowned-upon as smoking cigarettes in public, thus making a full moratorium a more socially acceptable solution."

The Canadian Cancer Society, Canadian Association of Physicians for the Environment and the Registered Nurses Association of Ontario have each spoken out against cosmetic pesticide use. The Ontario Public Health Association has generally supported bans on use and most recently came out in support of Toronto's bylaw.<sup>32</sup> The report of the College of Family Physicians of Ontario provides ample evidence for these stands.

In 2002, the Canadian Public Health Association called upon Canadian municipalities "to restrict the non-essential use of chemical pesticides on public and private land" and "to strengthen legislation governing pesticide use, ... educate the public about health effects", and called for "adequate resources for provincial public health units so that they may act as a resource to municipalities on pesticide reduction initiatives".

Many provincial governments have since reviewed their policies and the federal government began an Action Plan on Urban Use Pesticides with three elements: "reducing the reliance of Canadians on lawn care pesticides, registration of new reduced risk products, and product re-evaluation." Currently about half of reviewed pesticides have been removed from market and several more have had new restrictions on their use.<sup>1</sup>

Public health officials, whose opinion is more sought after than ever in the wake of

SARS, West Nile and Walkerton, cannot remain silent. Their voice should be measured, credible, allowing uncertainty as to the precise magnitude of effects, but they certainly must support a ban on any and every non-essential pesticide use.

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TABLE I Why Studies Cannot Fully Protect Society

- a) Vulnerable populations: Certain populations, such as children, foetuses and the elderly, may be disproportionately exposed or vulnerable. Certain individuals may be ethnically or genetically sensitive.
  - b) Acute vs. chronic, low-level exposure: Studies generally look at short-term effects and extrapolate. With animals, it is often short-term high exposure.
  - c) Weather conditions: Studies may assume ideal weather conditions for use.
  - d) Multiple exposures/interactions: A number of different pesticides are often present together in the same commercial products. Their effects may be additive or multiplicative.<sup>26</sup>
  - e) Critical vulnerability may occur with exposure during critical periods in foetal development, but this is usually neither noted nor measured.
  - f) Other ingredients: While active ingredients are tested, other components such as formulants, stickers, spreaders, emulsifiers and solvents are not. Many of these, such as toluene or benzene, are known carcinogens.
  - g) Who studies? With governmental resources increasingly curtailed on ideological or short-term economic grounds, industry has been allowed responsibility for doing its own studies. Unfortunately, though regulators formally provide oversight, industry researchers have biases which might be reflected in the design, conduct or reporting of study findings.
  - h) Grandfathering: Most pesticides were registered long before extra safety factors and present analytical methods were in place; many have not been re-evaluated for decades, if ever. 6,000 were registered by the 1969 PCPA administered by Agriculture Canada before the PMRA. The vast majority have not been re-tested.
  - i) End point not studied: Studies of 'hormone disruption' or effects on the nervous system of children can be difficult to carry out, and have only rarely been done.
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[www.weedinsectseminar.com](http://www.weedinsectseminar.com)

"None are more hopelessly enslaved than those who falsely believe they are free." Goethe  
.....

I have posted a lot of free pest control alternatives and other relevant information on the  
website located at: <http://www.safesolutionsinc.com/resources.htm> and/or  
<http://www.thebestcontrol.com> . There is a free 86 page booklet on how to control most  
pest problems without using any pesticide POISONS entitled: THE BUG STOPS HERE.  
There is a free chapter on Lice/Scabies, a chapter on Mosquitoes, a free chapter on  
Detoxification and a section on fire ants from my newest IPM manual/encyclopedia  
entitled: THE BEST CONTROL II. All of these copyrighted items are free for you to  
simply read and/or download. There simply is no need to POISON yourself.  
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"Want To Be Healthy?" you can find out how to Detox and become healthy again at:  
<http://www.safesolutionsinc.com/healthyv.pdf>  
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APPENDIX

2

ISIS Press Release 07/03/05

## Glyphosate Toxic & Roundup Worse

*Dr. Mae-Wan Ho and Prof. Joe Cummins call for urgent regulatory review of the most widely used herbicide in the light of new scientific evidence*

New research findings are raising serious concerns over the safety of the most commonly used herbicide, and should be sending shockwaves through proponents of genetically modified (GM) crops made tolerant to the herbicide, which now account for 75% of all GM crops in the world.

Worse yet, the most common formulation of the herbicide is even more toxic than the herbicide by itself, and is made by the same biotech giant that created the herbicide tolerant GM crops.

Broad-spectrum herbicide glyphosate (N-(phosphonomethyl)glycine), commonly sold in the commercial formulation Roundup (Monsanto company, St. Louis, Missouri USA) has been frequently used both on crops and non-crops areas world wide since it was introduced in the 1970s. Roundup is a combination of glyphosate with other chemicals including a surfactant (detergent) polyoxyethyleneamine that enhance the spreading of the spray droplets on the leaves of plants. The use of Roundup has gone up especially in countries growing Roundup-tolerant GM crops created by Monsanto.

Glyphosate kills plants by inhibiting the enzyme, 5-enolpyruvyl-shikimate-3-phosphate synthetase (EPSPS), essential for the formation of aromatic amino acids such as phenylalanine, tyrosine and tryptophan; which leads onto vitamins and many secondary metabolites such as folates, ubiquinones and naphthoquinones. It is believed to be rather specific in action and less toxic than other herbicides, because the shikimate pathway is not present in mammals and humans. However, glyphosate acts by preventing the binding of phosphoenol pyruvate to the active site of the enzyme, and phosphoenol pyruvate is a core metabolite present in all organisms; thus it has the potential to affect other metabolic pathways. This is borne out by many reports of toxicities associated with the herbicide reviewed in the Independent Science Panel Report, [The Case for a GM-free Sustainable World](#) [1].

An epidemiological study in the Ontario farming populations showed that glyphosate exposure nearly doubled the risk of late spontaneous abortions [2], and Prof. Eric-Giles Seralini and his research team from Caen University in France decided to find out more about the effects of the herbicide on cells from the human placenta.

They have now shown that glyphosate *is* toxic to human placental cells, killing a large proportion of them after 18 hr of exposure at concentrations below that in agricultural use [3]. Moreover, Roundup is always more toxic than its active ingredient, glyphosate; at least by two-fold. The effect increased with time, and was obtained with concentrations of Roundup 10 times lower than agricultural use.

The enzyme aromatase is responsible for making the female hormones estrogens from androgens (the male hormones). Glyphosate interacts with the active site of the enzyme but its effect on enzyme activity was minimal unless Roundup was present.

Interestingly, Roundup increased enzyme activity after 1 h of incubation, possibly because of its surfactant effect in making the androgen substrate more available to the enzyme. But at 18h incubation, Roundup invariably inhibited enzyme activity; the inhibition being associated with a decrease in mRNA synthesis, suggesting that Roundup decreased the rate of gene transcription. Seralini and colleagues suggest that other ingredients in the Roundup formulation enhance the availability or accumulation of glyphosate in cells.

There is, indeed, direct evidence that glyphosate inhibits RNA transcription in animals at a concentration well below the level that is recommended for commercial spray application. Transcription was inhibited and embryonic development delayed in sea urchins following exposure to low levels of the herbicide and/or the surfactant polyoxyethyleneamine. The pesticide should be considered a health concern by inhalation during spraying [4].

New research shows that a brief exposure to commercial glyphosate caused liver damage in rats, as indicated by the leakage of intracellular liver enzymes. In this study, glyphosate and its surfactant in Roundup were also found to act in synergy to increase damage to the liver [5].

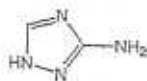
Three recent case-control studies suggested an association between glyphosate use and the risk of non-Hodgkin lymphoma [6-8]; while a prospective cohort study in Iowa and North Carolina that includes more than 54 315 private and commercial licensed pesticide applicators suggested a link between glyphosate use and multiple myeloma [9]. Myeloma has been associated with agents that cause either DNA damage or immune suppression. These studies did not distinguish between Roundup and glyphosate, and it would be important for that to be done.

***There is now a wealth of evidence that glyphosate requires worldwide health warnings and new regulatory review. Meanwhile, its use should be reduced to a minimum as a matter of prudent precaution.***

## Amitrole

### CAS No. 61-82-5

Reasonably anticipated to be a human carcinogen  
First Listed in the *Second Annual Report on Carcinogens* (1981)



### Carcinogenicity

Amitrole is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC 1974, 1982, 1986, 1987, 2001). When administered in the diet, amitrole increased the incidence of hepatocellular carcinomas and adenomas in mice of both sexes. When administered to weanling mice of both sexes by gavage and followed by dietary administration, amitrole induced tumors of the thyroid and increased the incidence of tumors of the liver. When mice of both sexes were nursed by dams fed diets containing amitrole, the incidence of hepatocellular carcinomas and adenomas was increased in males, but not females. When administered topically, amitrole did not induce skin tumors in mice of both sexes. One study of transplacental exposure to amitrole by mice yielded inconclusive results. When administered in the diet, amitrole induced malignant and benign tumors of the thyroid in rats of both sexes, and benign pituitary tumors in female rats. When administered in the drinking water, amitrole induced follicular cell carcinomas of the thyroid in female rats. When administered in the diet, no carcinogenic effect was observed in hamsters of both sexes (IARC 1974, 1986, 2001).

No adequate data were available to evaluate the carcinogenicity of amitrole in humans. In a small cohort study of Swedish railroad workers who had sprayed herbicides, there was a statistically significant excess of all cancers among those exposed to both amitrole and chlorophenoxy herbicides, but not among those exposed mainly to amitrole (IARC 1974, 1986, 2001).

### Properties

Amitrole occurs as colorless to white crystals or as a crystalline powder. It is odorless and has a bitter taste. It is readily soluble in water, methanol, ethanol, and chloroform, and insoluble in hydrocarbons, acetone, and ether. Amitrole forms salts with most acids or bases and is a powerful chelating agent. It is corrosive to aluminum, iron, and copper (IPCS 1994, HSDB 2001). The technical grade amitrole contains a minimum of 95% active ingredient and is formulated as a solution of 250 g/L in water, typically with an equimolar concentration of ammonium thiocyanate, or as a 400 g/kg wettable powder, generally in combination with other herbicides (IPCS 1994).

### Use

Amitrole was first patented for use in the United States in 1954 (NCI 1985). Amitrole is primarily used as a post-emergent non-selective herbicide and has a wide spectrum of activity against annual and perennial broad leaf and grass type weeds. Approved uses of amitrole on soil are either for non-crop land prior to sowing, or for inter-row weed control in tree and vine crops, where contact to food plants is avoided. It is also used for the control of pondweeds (IPCS 1994).

### Production

Amitrole is currently manufactured or formulated in several countries; although its use in the United States has declined, amitrole remains a widely used herbicide (IPCS 1994). Chem Sources (2001) identified 15 U.S. suppliers of amitrole. It was not reported to be produced commercially in the United States in 1982; however, imports that year

were reported to be 456,000 lb, which is a low value compared to the 1.2 million lb imported into the U.S. in 1978 (HSDB 2001).

### Exposure

The primary routes of potential human exposure to amitrole are inhalation and dermal contact. For the general population, exposure may occur mainly through ingestion of contaminated food or drinking water or inhalation of contaminated air near areas of high usage, such as herbicidal spraying (HSDB 2001). No residues of amitrole, however, have been detected in food and water following recommended use (IPCS 1994).

Particulates containing amitrole may be released during its production. Atmospheric levels ranging up to 100 mg/m<sup>3</sup> and river concentrations from 0.5 to 2 mg/L have been measured near one industrial facility (IPCS 1994). After application, amitrole can persist in soil for several weeks and in water for more than 200 days. The potential for exposure to amitrole exists during its manufacture or packaging and during its application as an herbicide. According to the National Institute for Occupational Safety and Health (NIOSH), approximately 83 workers were possibly exposed to amitrole in 1984, but no data were available on the number of people who potentially are exposed during its application or on the possible exposure levels in the public (HSDB 2001).

EPA's Toxic Chemical Release Inventory (TRI) lists 1999 emissions of amitrole at three facilities in the United States. Two of the three facilities reported a total release of 7 lb to air; one plant reported a 1 lb surface water discharge. Two plants reported a total offsite release of 168 lb (TRI99 2001).

### Regulations

#### EPA

Comprehensive Environmental Response Compensation and Liability Act

Reportable Quantity (RQ) = 10 lb

Emergency Planning and Community Right-to-Know Act

Toxics Release Inventory: Listed substance subject to reporting requirements

Resource Conservation and Recovery Act

Listed Hazardous Waste: Waste codes in which listing is based wholly or partly on substance - U011

Listed as a Hazardous Constituent of Waste

### Guidelines

#### ACGIH

Threshold Limit Value - Time-Weighted Average Limit (TLV-TWA) = 0.2 mg/m<sup>3</sup>

#### NIOSH

Recommended Exposure Limit (time-weighted-average workday) = 0.2 mg/m<sup>3</sup>

Listed as a potential occupational carcinogen

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Internet Site

## APPENDIX

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**Comparison of three weed control methods: chemical, flame and hot water.**

M. Hewitt, K. Bullen and D. George.

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**Abstract**

Two forms of thermal weed control, 'flaming' and hot water application, were compared with the herbicide glyphosate on the basis of efficacy of weed kill. Hot water was equally as effective as glyphosate. Flaming was not as effective, however, acceptable weed kill was obtained on juvenile weeds. Thermal weed control achieved a good to very good rate of weed kill provided a second application followed the initial treatment in situations that benefit control with thermal methods.

*Key words: Weed control efficacy, thermal, hot water, flaming, glyphosate.*

Public attitudes towards chemical usage for weed control and the evidence of resistances exhibited by some plants/weeds have prompted new investigations into the use of heat application for controlling weeds.

The principle of thermal treatment is to target the plant for short periods, less than 1 second, with intense temperatures at, or greater than, 100°C. Thermal weed control destroys plant cellular material, coagulating plant proteins, thus disabling respiration and normal plant functioning.

Three methods of weed control: chemical; flame; and, hot water treatment, were compared for efficacy of weed kill. The experiments were conducted on a surrogate oat crop and a weed infested pasture in May 1997 at the Gatton College Horticultural Field Section.

An Aquatech® unit, with handheld spraydeck was used for the application of hot water, whilst a Jet4® flamer (LPG fired), also hand operated, was used for flame application. Initial and repeat applications of the thermal treatments occurred, 20 May and 10 June respectively. A repeat application of glyphosate was not necessary. The efficacy of kill was visually rated using a percentage scale for efficacy and phytotoxic effect (1). Glyphosate solution (1:25) was applied at 3L/plot. LPG consumption was measured at 125 kg/Ha and water consumption averaged 410 L/plot. Control plots were used as a reference for the visual rating. Plot size was 30 m<sup>2</sup>.

There is a lack of scientific literature on hot water treatment for weed control due to its brief history. Whilst considerable experimentation has occurred with flame cultivation (2), comparative studies such as this, do not appear to have been conducted or, at least, published.

**Results**

Observations were made over a period of 8 weeks. Very good to excellent efficacy rates were evident in Aquatech® treatments, (Fig. 1), with slight decreases in time from re-shooting and regrowth of weeds.

Jet4® results showed a striking effect on weed kill following a second application. Efficacy rates in the weedy pasture were high after the second treatment with minor reductions due to re-shooting and regrowth in time. A 60% efficacy rate was recorded at 8 weeks after two applications, whereas the equivalent single application was barely observable. Jet4®

performance in the oats rated from poor to fair by comparison, with low efficacy rates and decreasing efficacy with time lapse from application, (Fig. 2).

Glyphosate proved to be highly effective. Glyphosate action was slow compared to the alternatives. Careful consideration is necessary when comparing the three methods due to variations in application rates and inputs. Effective comparison between the treatments is possible provided consideration of the high application rates of glyphosate is heeded. Plots receiving two thermal treatments had significantly less regrowth and weed infestation when compared with a single application treatment. Reapplication of both Aquatech® and Jet4® markedly increased the efficacy. The decline in efficacy for Jet4® is attributed to plant recovery which is more evident in the oats trial due to the higher resistance of established (non-juvenile) monocots to heat/fire.

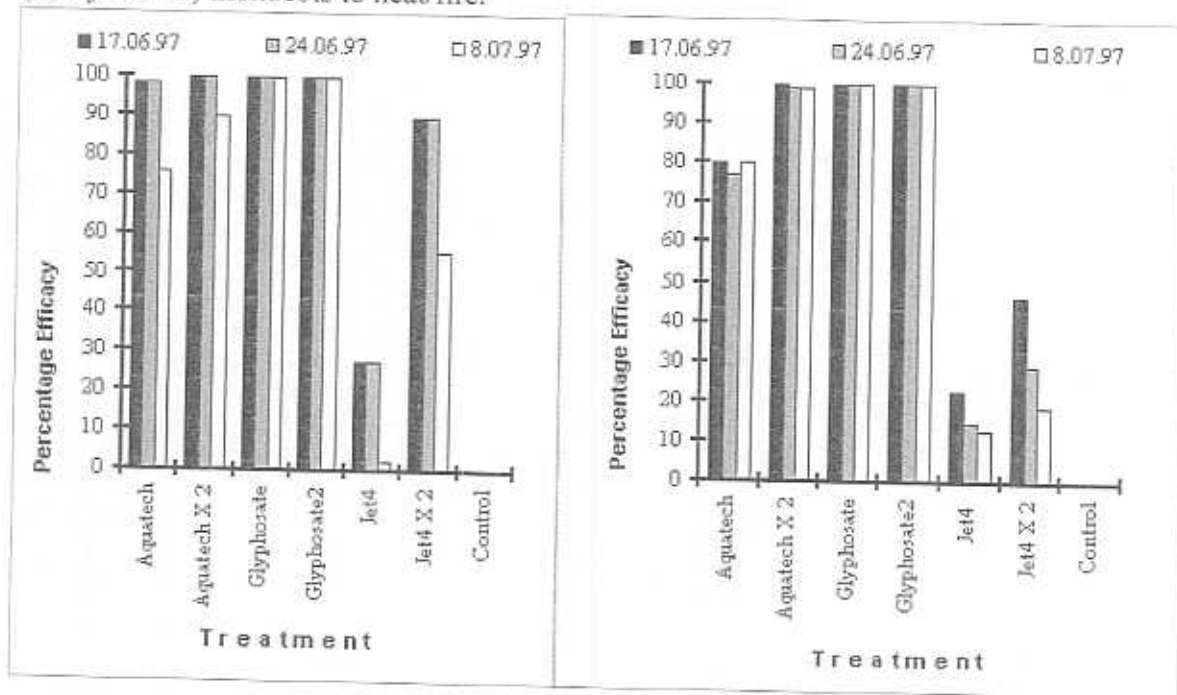


Figure 1: Percentage efficacy of treatment applications in the weed infested pasture trial.

Aquatech® was highly effective and repeat applications increased this efficacy. Jet4® weed control was effective following two applications in shorter less dense foliage. The tall dense foliage of the 8 week oat crop was more resistant to the flaming treatment than that of the weedy pasture. Targeting juvenile plants produces a far greater efficacy due to plants having a much higher susceptibility to the intense heat (L. Laimer, *pers. comm*). Further testing and investigation into the efficacy of the non-chemical alternatives is required to determine their effectiveness in different situations.

## Conclusions

Thermal weed control is most effective when two sequential applications occur 3-4 weeks apart. Repeat applications of thermal methods markedly increase the efficacy of weed kill. This effect was more evident for Jet4® applications than for Aquatech® weed control. Both alternative measures proved to be effective methods of controlling weeds in situations amenable to hand held spot weeding, Aquatech® being the most effective.

## Acknowledgments

Sincere thanks to Geoff Modra, Spraytech Australia and Lynnea Laimer, Gameco Engineering for their support, supply of equipment and assistance in conducting the trial.

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APPENDIX

5

## new law for notifying the community when public authorities use pesticides in public places



From 1 February 2007 changes to the Pesticides Regulation 1995 will require public authorities, such as local councils and government agencies, to notify the community, in accordance with a

notification plan, when they use or allow the use of pesticides in public places that are owned or controlled by the public authority.

The changes are based on the principle that people who live and work in an area have a basic right to know when public places in the area are treated with pesticides. Notifying people about pesticide applications means they can make informed decisions, for example, parents with young children may choose to delay a visit to the playground if they know pesticides have been applied that day.

Notifying members of the public about pesticide use before it happens will not mean that they can prevent the use of pesticides in the area. The aim of notification is to allow people to choose to reduce their exposure to pesticides if they wish. Notifying the community is now internationally recognised as best practice in pesticides management.

This information sheet explains what public authorities need to do to comply with the new requirements. It explains how to consult with the community when developing a pesticide use notification plan to suit local needs.

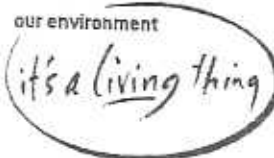
### *What is a pesticide use notification plan?*

A pesticide use notification plan describes where a public authority uses pesticides and the steps it will take to notify people about its pesticide use in those places. It must be prepared by a public authority (including a local council) in consultation with the local community. Many public authorities already notify their communities when they use pesticides in the area, for example, through advertising or letterbox drops.



pesticides

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### *What does the new law say?*

From 1 February 2007 public authorities, including local councils, must not use pesticides in prescribed public places **unless** a notification plan has been prepared and notice has been given in accordance with the plan.

A public authority's notification plan must describe:

- the **categories** of prescribed public places where it uses pesticides or allows other people to use pesticides (for example, contractors or lessees)
- **how** it will notify the community before it uses pesticides in prescribed **public places**
- **what** special steps it will take to notify the community before pesticides are applied in prescribed public places that are located next to **sensitive places** such as schools, kindergartens, childcare centres, nursing homes or hospitals.

From 1 February 2007, public authorities cannot use or allow the use of pesticides unless a notification plan has been:

- **developed** in consultation with the community
- **finalised, advertised and made publicly available.**

The community must be notified of pesticide use in the way the finalised plan describes.

### *What is a prescribed public place?*

In summary, prescribed public places are any of the following places that the public is entitled to have access to (with or without paying a fee):

- public gardens
- picnic areas
- playgrounds

- parks, sporting fields, or ovals
- national parks and other lands reserved under the *National Parks and Wildlife Act 1974*, State forests or Crown land
- any public land owned or controlled by a public authority, for example, road verges, and rail and electricity easements.

A prescribed public place also includes school and TAFE grounds, but does not include the inside of any buildings or structures. All prescribed public places **must** be considered in the notification plan.

The full definition of a prescribed public place is in Part 4B clause 11J of the Pesticides Regulation. The full definition should be read before a notification plan is prepared.

### *What is a sensitive place?*

In summary, a sensitive place is any:

- school or pre-school
- kindergarten
- childcare centre
- hospital
- community health centre
- nursing home.

The full definition of a sensitive place is in clause 11J(1) of the Pesticides Regulation. The full definition should be read before a notification plan is prepared.

The Department of Environment and Conservation (DEC) can declare additional places to be sensitive places by publication of a notice in the Government Gazette. Any additions will be listed on the DEC website at [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

### *What information must a notification plan for the use of pesticides include?*

A notification plan must set out how and when the public authority will give public notice of the proposed use of pesticides in any prescribed public place it owns or controls. In particular, the notification plan must contain information about:

- **where** the plan will apply. The plan must identify the **categories** of public places where pesticides are to be used. For example, a notification plan might say that pesticides are used at 20 local parks and playgrounds and list their names and addresses. Where the notification plan refers to road verges, it may be sufficient for the plan to say that pesticides may be used on all council-managed roads within its area, and refer to a map showing the local government area boundaries. It may not be necessary to identify each public place.
- **who** regularly uses the public places. For example, a notification plan might say that the public places covered in the plan are used by local families, children, school groups and the general public. The notification plan will also need to give a general estimate of the **level of use**. For example, the notification plan might say that these places are **frequently** used by local families.
- **how and when** the public authority will notify people about proposed pesticide use in public places. The notification plan needs to give details about the **specific notification arrangements** that will be used. For example, the local notification plan might say that the council will use newspaper advertisements, web-postings, information included with rates notices, mail-outs and/or signs to give notice of

a pesticide application. The notification arrangements will vary among public authorities, including councils, in accordance with the circumstances and needs of each local community. The notification plan must identify the categories of, or specify particular public places for which the public authority will provide notification of all or only some proposed uses of pesticides, and what those uses are. The notification plan must also specify the public places for which the public authority does not intend to provide notification.

- **what information will be provided** about a pesticide application. The notification plan needs to say what types of information will be given to the community when giving them notice of pesticide use. The Pesticides Regulation sets out minimum information requirements for when notice is given. The notice given to the community **must include**:
  - **where** the pesticide will be used, **and**
  - the **full product name** of the pesticide that will be used, **and**
  - the **purpose** of the use (for example, to kill noxious weeds), **and**
  - the proposed **date/s** of use (where possible be specific, for example, weed spraying in specific streets in the week 1-7 August). Where it is not possible to provide a specific period, a range of dates of when an application will take place should be given, **and**
  - a **phone number/email address** for the officer who can be contacted about the notice, **and**
  - any **warnings** on the pesticide label or permit about how long the area must be avoided after a pesticide application.

- how the **community** will be informed about the notification plan. The plan also needs to give the **contact details** of an officer the community can contact to discuss the notification plan. It must include their job title or description, and phone number or email address.
- how the plan will be **reviewed** in the future and how the community can be involved in future reviews. There is no specific time requirement for review, but it is expected that all plans will be updated from time to time, consistent with community expectation.

### *What do notification plans need to say about sensitive places?*

The notification plan will need to describe what notification measures will be used to provide special protection if pesticides are used in a prescribed public place that is **next to a sensitive place**, such as a school or hospital. For example, special protection could include providing notification earlier, in greater detail and/or in a different form to ensure that the risk of people at sensitive sites coming into contact with the pesticide application is minimised.

If a pesticide must be used to deal with an emergency near a sensitive place, extra steps should be taken to let people know about it. For example, public authorities could make sure a door-knock takes place so people are aware that a pesticide is about to be used to deal with a dangerous pest infestation.

### *Can a notification plan cover other things?*

Yes. The new law means that prescribed public places and sensitive sites must be covered by notification plans. The plan can include additional areas if the public

authority wishes. For example, it could include the inside of any buildings in public places or list the extra steps needed to protect places like organic farms when pesticides are used nearby. However, it is not compulsory to include these details in the notification plan.

Extra information about the pesticide application can also be included in a notification plan. For example, it might describe how a pesticide will be applied to an area by a public authority.

### *Can I get help to prepare a draft notification plan?*

Yes. DEC has developed two simple documents to help public authorities, including councils, write a notification plan:

- a notification plan template – all you need to do is fill in the blanks on this template
- an example notification plan – this gives examples of the kind of information that needs to be included in your notification plan.

You can get a copy of the template and the example notification plan from DEC's website ([www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)) or through DEC's Environment Line, phone 131 555.

You do not have to use the template DEC has developed – it has been provided as a guide only.

### *How does the community get to comment on draft plans?*

Remember, a notification plan will only comply with the new law if the community has been consulted. The Pesticides Regulation sets out the steps public authorities need to follow to get the necessary level of community input.

If you are responsible for preparing a public authority's plan you need to:

- **publicly announce** that a draft notification plan is ready for community input. If your notification plan covers areas throughout NSW, you need to put a notice in a state-wide newspaper. If your notification plan covers only a specific local area or areas, you need to put a notice in a newspaper that circulates generally in those areas. You do not have to limit your announcement to one newspaper – this is the minimum notice that you need to give. The notice must specify the area in which the plan is to operate.
- mention in the notice **where a copy of the draft notification plan** will be displayed and make sure it is available for viewing during office hours, free of charge. If you have a website, it should also be displayed there.
- include details about **how the community can provide their comments and how long they will have**. At least four weeks must be given for their comments after the notice is published in the newspaper. The draft plan needs to be freely available for community inspection during this period.
- make sure that you prepare your draft notification plan with enough time to receive and consider comments from the community. When you have considered the submissions from community members and made any subsequent changes to the plan, you will have developed your final notification plan.

### *What happens when the notification plan is finalised?*

Once the final notification plan is ready, public authorities must **announce** where the notification plan will operate and where the plan can be viewed. To do this, the public authority needs to publish the announcement in the NSW Government Gazette. The announcement must also be published in the same type of newspaper used to publish the notice for the draft notification plan.

Public authorities also need to write to DEC stating whether or not its notification plan has been prepared in accordance with the Pesticides Regulation.

The plan must be made available to the public for inspection free of charge at the public authority's main office. It should also be placed on the public authority's website, if it has one.

### *When will the new requirements begin?*



Public authorities will have until 1 February 2007 to consult with the community and finalise their plans for notifying people.

### *Do notification plans affect people who lease land from public authorities, or contractors who use pesticides in public places?*

Yes. A public authority's plan affects public places that it leases out. If a public authority employs contractors to use pesticides in public places or in public places near sensitive sites, the authority's notification plan still needs to be followed. Public authorities are responsible for advising lessees or contractors about their notification plan. Public authorities are

also liable if notification is not carried out in accordance with the authority's notification plan. This is regardless of whether the public authority has engaged someone else to carry out the notification on their behalf.

### *What happens if these new requirements are ignored?*

Penalties may apply where pesticides have been used in a prescribed public place but a notification plan has not been developed and displayed in accordance with the regulation, or, if the notification was not carried out in accordance with the plan. Penalties may also apply to a public authority if it employs a contractor to use pesticides who does not notify according to the public authority's notification plan. Court imposed fines of up to \$44,000 could apply to corporations and fines of up to \$22,000 could apply to individuals. In other instances, on-the-spot penalty notice fines of \$800 for corporations or \$400 for individuals may apply.

### *Where can I get more information?*

If you are unsure about your role in preparing and putting a notification plan into operation you can visit the DEC website at [www.environment.nsw.gov.au/pesticides/](http://www.environment.nsw.gov.au/pesticides/), or phone DEC's Environment Line on 131 555 (cost of a local call from anywhere in NSW). See the Pesticides Regulation 1995 (available at [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au)) for full details on notification requirements.

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