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TABLE OF CONTENTS

Alberta Environment Regional Offices..... 1

Pesticide Regulation Amendments..... 1

Amendments to the Environmental Code of Practice For Pesticides..... 1

New Active Ingredients For 1999 2

Carbofuran (Furadan) 2

Silent Label Requirements – January 2000..... 3

Turfgrass Research at Olds College..... 4

Invasive Species 4

Farmers Providing Custom Pesticide Application Services..... 4

Pesticide Statistics..... 6

Pesticide Management Program Initiatives..... 7

Precipitation and Air Monitoring For Pesticides..... 7

Enforcement Actions By Alberta Environment For 98/99..... 8

Internet Sites of Interest 9

Standing Committee on Environment and Sustainable Development 10

NEWSLETTER

Pesticide Services



Spring 2000

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Alberta Environment Regional Offices

Responsibilities for delivery of services (i.e. issuance of registrations, pesticide complaint investigations, and day-to-day program delivery) reside with the recently established regional offices of the Environmental Service of Alberta Environment. Questions on any of these topics should be directed to your nearest office below.

Prairie Region: Lethbridge ph. 403-381-5511

Bow Region: Calgary ph. 403-297-7602

Parkland Region: Red Deer ph. 403-340-7052

Northeast Boreal Region: Edmonton ph. 780-427-7617

Northeast Slopes Region: Edson ph. 780-723-8395

Northwest Boreal Region: Grande Prairie ph. 780-538-5460

Pesticide Regulation Amendments

Alberta Environment is finalizing some amendments to the Pesticide Sales, Handling, Use and Application Regulation (A.R. 24/97) and the Pesticide (Ministerial) Regulation (A.R. 43/97). Most amendments are intended to clarify current regulatory provisions (information was provided in the 1999 Pesticide Service/Vendor newsletters). When amendments have been signed into law they will be posted on the Queen's Printer website at: <http://www.gov.ab.ca/qp> The target date for regulatory changes to come into force is January 1, 2001.

Amendments to the Environmental Code of Practice For Pesticides

Alberta Environment is currently finalizing some amendments to the "Environmental Code of Practice For Pesticides". Most of the amendments are intended to clarify current requirements. Applications of pesticides near water will be the area of most significant changes. The Code currently allows the application of specified pesticides up to five metres from the bed and shore of an open body of water. Revisions will allow some pesticides to be applied up to one metre from the bed and shore (information was provided in the 1999 Pesticide Service/Vendor newsletters). The target date for new Code provisions to come into force is January 1, 2001.

New Active Ingredients For 1999

The Pest Management Regulatory Agency registered (for the first time) the following new technical active ingredients in Canada in 1999:

- Acetic Acid
- Bedoukian Trans-11-Tetradecenyl Acetate
- Citronellal
- Diflufenzopyr
- Fenhexamid
- Ferric Phosphate
- Isoxaflutole
- Kresoxim-methyl
- Mixture: Citronella Oil, Citrus Oil, Eucalyptus Oil, Pine Oil
- N-Cyclopropyl-N'-(1,1-Dimethylethyl)-6-(Methylthio)-1,3,5-Triazine-2,4-Diamine
- Oil of Black Pepper
- Oriental Fruit Moth Pheromone
- Peracetic Acid
- Piperine
- Sulfosulfuron
- Tebuconazole
- Trichoderma harzianum Rifai Strain KRL-AG2
- Triclopyr Triethylamine Salt
- Uniconazole-P

As previously mentioned, these are registered technical active ingredients. Most of these products have specialized uses and some of the end-use products that are likely to be registered at a later date may never be used in Prairie agriculture. It is important to realize that despite all of the news that surrounds the PMRA, they have registered on average at least one new active ingredient per month. In 1998, the number of new technical active ingredients registered was 24.

Carbofuran (Furadan)

In 1995 the federal Pest Management Regulatory Agency released a Decision Document which announced and explained the outcome of the special review for each of the uses of carbofuran. It is close to five years since this document has been released and applicators may not be aware of remaining registered uses. This article is to remind applicators of the remaining legal uses of carbofuran (Furadan 480 Flowable). These include:

- Potatoes - for control of Colorado Potato Beetle; Potato Flea Beetle by ground application only;
- Corn (Sweet, Field*, Silage*) - for control of European Corn Borer; Western and Northern Corn Rootworm adults by ground or aerial application (*Western Canada only);
- Green Peppers - for control of European Corn Borer by ground application only (Ontario only);

- Sunflower - for control of Sunflower Beetle by ground application only;
- Canola (rapeseed)/Mustard for control of Flea Beetle and Red Turnip Beetle by ground or aerial application;
- Raspberry (Field) - for control of Bud or Root Weevil by ground application only (British Columbia only);
- Strawberries - for control of Root Weevil, Spittlebug, Strawberry Weevil (Blossom Clipper) and Tarnished Plant Bug by ground application only (British Columbia only);
- Sugarbeets - for control of Sugarbeet Root Maggot by ground application only (Western Canada only).

The following uses are **no longer registered**:

- Cereals, Pastures, Headlands, and Roadsides for Grasshopper control;
- Wheat for control of Orange Wheat Blossom Midge;
- Alfalfa for the control of Alfalfa Weevil and Alfalfa Blotch Leafminer.

Applicators are cautioned to read and follow label directions carefully. The label contains numerous limitations and prohibitions. Contact your nearest Bayer Inc. representative for clarification of any of the remaining uses.

Aerial Registration for Matador

A supplemental label has just been granted to Zeneca Agro for the aerial application of Matador (cyhalothrin-lambda) to field crops. This includes potatoes, canola, mustard, sunflowers, flax, wheat, barley, oats, unimproved pasture and summerfallow. Contact your Zeneca representative for further details.

Silent Label Requirements – January 2000

This is a reminder to all applicators that effective January 1, 2000, all manufacturers were required to notify the Pest Management Regulatory Agency (PMRA) of their intentions to clarify “silent labels” with respect to aerial application. Labels that are silent (i.e. do not specify whether they can be applied by air or not, or do not indicate any prohibitions against aerial application) are now considered to be **not registered** for aerial application, unless they specifically indicate that they are registered. Applicators who wish to clarify the status of a product that previously was a “silent label” product should check with their nearest PMRA office in:

- Lethbridge ph. 403-382-4794
- Calgary ph. 403-292-4106
- Edmonton ph. 780-495-7014

Turfgrass Research at Olds College

Alberta Environment funded a research study through the Prairie Turfgrass Research Centre (PTRC) at Olds College in 1998 to look at the potential for compost to help mitigate disease stresses caused by a cool-season *Pythium* pathogen (*Pythium* root rot). A number of golf courses in Alberta experienced severe disease problems on their greens, starting in 1994 and peaking in 1997, resulting in a significant increase in fungicide applications with little effect noted. The hypothesis to the study was that by improving the soil microbial population (and soil health) through the addition of various types of compost, greater resistance to disease pressure would be observed. Composted material (poultry manure, bark) was compared to specialty products that enhance microbial populations, and to conventional fungicides. Although disease pressure was not as evident in 1998 as in previous years, the poultry manure compost and one of the specialty products did show a reduced number of fungal organisms, and a better quality of grass. Since then, the PTRC has undertaken more research in this area, and is now working with a number of golf courses to improve their cultural practices, which improves soil microbial health and reduces plant stresses, which lead to reduced disease pressure.

Invasive Species

Ever heard of the “Fishhook Waterflea”? How about the “Round Goby”? Surely, you have heard of the “Zebra Mussel”? “Asian Long Horn Beetle”? If not, you should learn more about them. These four “invaders” (non-indigenous species) have been discovered in North America, and have the potential to spread, displacing native species and causing millions of dollars in potential damages to native trees, fish stocks and aquatic infrastructure. Three of these invasive aquatic species have been discovered in eastern North America in the Great Lakes drainage basin, and it is probably only a matter of time before their presence is discovered in Alberta. The United States has already spent millions of dollars in attempts to rid itself of these species. For further information on their biology and potential problems associated with their introduction, check out the following website: <http://www.anstaskforce.gov/species.htm>

Information on the Asian Long Horn Beetle can be obtained from the Canadian Food Inspection Agency’s website: <http://www.cfia-acia.agr.ca/english.toc.html>
Check under the “Import” heading for Asian Long Horn Beetle.

Farmers Providing Custom Pesticide Application Services

Every year Alberta Environment receives complaints from custom agricultural services about the existence of uncertified applicators/non-registered services (usually large grain producers that purchase spray equipment for their own farm, then begin to offer “custom application services” to surrounding farmers at discounted rates). Unfortunately, there is often little or no paperwork associated with these transactions, usually no “adverse effect”, and the client receiving the services is not prepared to testify against the person that provided the illegal service.. It is therefore difficult to obtain evidence necessary to effect a prosecution. Often, the party that expresses frustration with the offending parties

is reluctant to be a witness at a trial because they all live and work in the same community. Without evidence and witness statements, there is no case. Education of the farming community is one option at changing the practices of illegal applicators. By advising farmers that they could be held liable for any damage to neighboring crops, etc., may change attitudes toward hiring illegally operating pesticide services which have no insurance and no certified applicators as required by law.

When is a Service responsible for the actions of its certified applicators?

Applicators are employees and an employer is always responsible for the actions of its employees when the employees are performing work related to their employment. Employers can be held accountable even for deliberate illegal acts.

Section 239 of the Alberta Environmental Protection and Enhancement Act covers vicarious liability as follows:

“For the purposes of this Act, an act or thing done or omitted to be done by a director, officer, official, employee or agent of a corporation in the course of his employment or in the exercise of his powers or the performance of his duties shall be deemed also to be an act or thing done or omitted to be done by the corporation.”

What can a Service do to minimize liability from the actions of certified applicators?

- Conduct a thorough review of previous work history and references prior to employment. Even if an applicator has an exemplary pesticide application record, non-related factors may make the applicator a poor employment risk (alcohol or drug abuse, driving offences, criminal offences, etc.).
- Supervision through probationary period to ensure that operating practices are in accordance with regulations, industry standards, and the policies and procedures mandated by the Service. The fact that someone has a pesticide applicator certificate only verifies that the person has met minimum knowledge requirements.
- No interference in pesticide application decisions by someone who is not a certified pesticide applicator. Although a certified applicator is responsible for ensuring legal, safe application, no one should expect a certified applicator to risk losing employment or favour by opposing the direction of a non-certified supervisor.

Pesticide Statistics

There are many issues concerning pesticide use and many differences of opinion regarding how pesticides should be managed. Accurate, up-to-date information is essential in evaluating concerns and ensuring that risks are managed without being “over-managed.” Alberta Environment has collected pesticide sales records from Alberta pesticide vendors for the 1993 sales year and the 1998 sales year. A third collection is planned again for 2003 allowing us to ensure that information is updated every five years. These records are used to monitor pesticide use trends and to determine pesticide monitoring priorities. Reports will be available through the Pesticide Management Program website <http://www.gov.ab.ca/env/protenf/pesticide/> (release scheduled by January 1, 2001). Anyone without Internet access can contact the Pesticide Management Program for report copies.

This year, and for the next four years, Alberta Environment will be surveying Alberta Registered Pesticide Services to provide information about pesticide use patterns and practices for particular industry sectors. Surveys were sent to all Structural and Aerial services this winter. Other industry sectors will be surveyed as follows:

- 2001 Landscape
- 2002 Industrial
- 2003 Agricultural
- 2004 Other Categories

Services that hold registrations for more than one category will only be surveyed once. Landscape was originally scheduled for 2003 but was re-scheduled to 2001 following release of the report from the Standing Committee on Environment and Sustainable Development which placed special emphasis on pesticide use in urban environments (see article in this newsletter).

There are currently 4,079 certified pesticide applicators in Alberta as follows (many applicators hold certification in more than one category):

- Aerial 246
- Agricultural 1,661
- Industrial 1,616
- Landscape 1,630
- Structural 124

There are currently 980 registered pesticide services in Alberta as follows:

- Aerial 6%
- Agricultural 30%
- Industrial 25%
- Landscape 24%
- Structural 4%
- Other 11%

Pesticide Management Program Initiatives

- Working with the Industrial Vegetation Management Association of Alberta (IVMAA) to establish criteria for “qualified assistants”. These assistants would be able to apply all pesticides without on-site supervision from a certified pesticide applicator.
- Working with the IVMAA and the APMA to establish criteria for Industrial and Structural applicator certification renewal most likely through a credit system.
- Working through the North American Free Trade Agreement (NAFTA) Technical Working Group on Pesticides to develop a North American examination standard for pesticide applicators.
- Working with the Alberta Aerial Applicator Association to establish calibration guidelines for mandatory aircraft calibration and certification.
- Working with the Alberta Association of Agricultural Fieldmen to review the Weed Control Act and roadside vegetation management.
- Working with Forest Management Division to:
 - ensure that forestry herbicide “excursions” are dealt with in a manner consistent with other pesticide off-target incidents and forest management programs.
 - assist the Herbicide Task Force in reviewing and updating the Forest Management Herbicide Reference Manual and an appeal process for forestry herbicide proposals/authorizations.
- Establishing more detailed guidelines for the use of Reglone A Herbicide for aquatic vegetation management in lakes.
- Working with the City of Edmonton and City of Calgary to provide awareness and education regarding household pesticide use for landscape maintenance.
- Preparing a document **Pesticide Management in Alberta: Surface Water Quality** that identifies which pesticides are monitored, how detections are evaluated for significance, and what action is taken to address increasing detections or guideline exceedences.

Precipitation and Air Monitoring For Pesticides

In 1997, Alberta Environment undertook a pilot program looking at pesticide residues in rainfall in the Edmonton area. This was followed up in 1998 by further monitoring in Edmonton, and in a rural area east of Lacombe. Precipitation samples collected during

May, June and July had frequent detections of pesticides (primarily phenoxy herbicides), at levels ranging from 0.005 ppb (detection level) up to 0.5 ppb. There was a distinction in products found in the urban setting, in relation to use (dicamba, mecoprop, and some domestic insecticides). Products such as 2,4-D, MCPA and bromoxynil were found regularly at both sites.

Agriculture Canada in Lethbridge also undertook a pilot precipitation sampling program in 1998, and received funding to expand their project for 1999 and 2000. They have been finding higher levels of 2,4-D in southern Alberta, where 2,4-D is more widely used in agriculture, while MCPA predominates in the samples collected further north. Overall loading estimates have been made, and some work on the impact of low levels of phenoxy herbicides in precipitation on sensitive crops is being undertaken in 2000. Alberta Environment and Agriculture Canada are also working together to define long-term monitoring program requirements and procedures after the 2000 data has been collected and analyzed.

Sampling of ambient air was also conducted in 1998 and 1999 by Alberta Environment, in conjunction with the Alberta Research Council. A different spectrum of products is found in ambient air, which is reflected in the high vapour pressure of these compounds. Compounds found in precipitation can be generally characterized as being of high water solubility.

The neutral herbicides (trallate, trifluralin, ethalfluralin) are the compounds in wide use that were most frequently detected in air. This is not surprising, considering the high volatility of these compounds. These compounds were regularly found until snow covered the ground. Other products such as lindane, pentachlorophenol and hexachlorobenzene were also regularly detected in samples. Lindane detections started at seeding time (early to mid-May), and tapered off during the summer. Pentachlorophenol, a wood preservative, is widely found throughout Alberta, through all seasons. Hexachlorobenzene is an old insecticide, no longer used in Canada. The source of this compound is thought to be from outside of Canada.

Enforcement Actions By Alberta Environment For 98/99

A new report entitled, "Enforcement Activities – Annual Report April 1, 1998 – March 31, 1999" lists the enforcement activities of Alberta Environment for that period. Of the 122 charges concluded* under the Environmental Protection and Enhancement Act, 16 were pesticide-related and accounted for 13 per cent of the total charges concluded*. In addition, seven administrative penalties for pesticide violations were assessed, accounting for 20 per cent of the total administrative penalties assessed. Numbers of actions taken under the *Environmental Protection and Enhancement Act* included:

- Administrative Penalties 34
- Enforcement Orders 1
- Enforcement Orders for Waste 2
- Environmental Protection Orders 1

- Tickets 7
- Warnings 37
- Charges Laid 47
- Charges Concluded* 128

Total Fines/Penalties Assessed:	Administrative Penalties	\$165,250.00
	Tickets	850.00
	Prosecutions	\$1,191,500.00
	Total	\$1,357,555.00

For complete details, refer to the website at <http://www.gov.ab.ca/env/protenf/publications/EnforceAnnualReport.pdf>

*Charges concluded – includes charges that resulted in a conviction, and charges withdrawn, stayed, dismissed or resulted in an appeal.

Internet Sites of Interest

There are numerous sites concerning pesticides and pest control that Pesticide Management Program staff have explored that may be of interest to you in your daily work. A few of them are listed below. (Note: inclusion of any of the following websites does not indicate any type of endorsement by Alberta Environment. Website addresses were correct at the time of printing).

- Canadian Pest Management Regulatory Agency <http://www.hc-sc.gc.ca/pmra-arla/>
- U.S. Environmental Protection Agency, Office of Pesticide Programs <http://www.epa.gov/pesticides/>
- Alberta Environment, Pesticide Management Program Home Page <http://www.gov.ab.ca/env/protenf/pesticide/index.html>
- Alberta Agriculture, Food & Rural Development (Ropin' The Web) <http://www.agric.gov.ab.ca/>
- California Environmental Protection Agency, Department of Pesticide Regulation <http://www.cdpr.ca.gov/index.htm>
- United Kingdom, Pesticides Safety Directorate <http://www.maff.gov.uk/aboutmaf/agency/psd/psdhome.htm>
- Extension Toxicology Network (EXTOXNET) <http://ace.ace.orst.edu/info/extoxnet/>

Pesticide Manufacturer's Sites

- AgrEvo Canada <http://www.ca.agrevo.com/>
- Aventis Crop Science <http://www.ca.cropscience.aventis.com/index.html>
- BASF Corporation <http://www.basf.com/businesses/consumer/agproducts/index.html>
- Bayer Inc. <http://bayer.ca/>
- Cyanamid <http://www.farmlinepartners.com/pub/west/products/index.html>
- Dow Agro Sciences <http://www.dowagro.com/canada/>

- DuPont Canada <http://www.dupont.ca/ag/index.cfm>
- Gustafson Inc. <http://www.gustafson.ca/>
- Monsanto Canada Inc. <http://www.farmcentral.com/>
- Novartis <http://www.cp.novartis.com/>
- Nufarm <http://www.nufarm.com/index.htm>
- Rhone-Poulenc <http://www.rp-ag.com/RPAG.htm>
- Rohm and Haas <http://www.rohmhaas.com/businesses/AgChem/index.htm>
- Sumitomo http://www.sumitomo-chem.co.jp/organizn/agro_e.html
- Tomen Agro <http://www.tomenagro.ca/>
- Uniroyal Chemical <http://www.uniroyalchemical.com/>
- United AgriProducts <http://www.uap.ca/>
- Zeneca Agro <http://www.zeneca.ca/zeneca/website/ZenWeb6.nsf>

More sites will be forthcoming in the next newsletter.

Standing Committee on Environment and Sustainable Development

The Standing Committee released their report **PESTICIDES Making the Right Choice For the Protection of Health and the Environment** in early May, 2000. The 212 page report makes many far-reaching recommendations concerning the future direction of pesticide registration and use in Canada. Following is the preface written by the Chairman (Charles Caccia, former federal Environment Minister) to the report which provides the general tone. Copies of the full report are available through the following website addresses:

English:

<http://www.parl.gc.ca/InfoComDoc/36/2/ENVI/Studies/Reports/envi01-e.html>

French:

<http://www.parl.gc.ca/InfoComDoc/36/2/ENVI/Studies/Reports/envi01-f.html>

During the past 12 months the Standing Committee on Environment and Sustainable Development of the House of Commons has studied not only the extent of, and the reasons for, the use of pesticides, but also their impact on human health and the environment. We have also studied the economic implications of their use and the administrative responsibility for regulating them.

Clearly, as a society, we have become very dependent on the use of pesticides. This does not mean, however, that we are unable to alter such practices. We can all think of other products which were once widely used in our society and today we have been abandoned because of changes in values and attitude. Prime examples include the use of tobacco, asbestos and lead. The major shift with respect to public acceptance of smoking would not have been contemplated two decades ago. The same can be said

about the use of lead in gasoline – now mostly a thing of the past – yet deeply entrenched when the first concerns about its neurotoxicity emerged. A similar pattern can be found in the use of asbestos in buildings, once prevalent and now banned.

As we all know, governments act with greater speed and resolution when clear arguments are made about dangers posed to public health. At times governments have acted without waiting for the smoking gun, but at other times reluctantly due to competing views by sectoral interests. In the meantime, the public bore the costs of protracted inaction, be it in the form of pulmonary diseases and cancer in the case of tobacco and asbestos, or in the form of lower IQs and learning disabilities in children, as in the case of lead. With pesticides, we have good reasons to worry about public health, safety and the special vulnerability of our children. Public health groups, including family physicians, were very forceful and persuasive in expressing to the Committee their deep concerns about the current pervasive use of pesticides in our society. Citizens are not waiting for the smoking gun to act; they are taking action to reduce, and in some cases ban the use of pesticides for cosmetic purposes in their communities.

When we looked at the economic side of this issue, a key question emerged: can our present food production and distribution systems, which are so integral to our daily lives, survive in the absence of pesticides? The frank answer is that our reliance on pesticides in agriculture is so overwhelming, it would be impossible for us to abandon their use in the short term. Unfortunately, there is no replacement system readily available, no instant or magic solution. There is much debate as to whether an adequate food supply, at a reasonable price for consumers and a lesser cost to farmers, can be brought to market without pesticides. When could organic farming become an economically viable alternative for farmers and consumers and under what conditions?

The European Union (EU) has experienced a remarkable growth in organic agriculture in the last decade, particularly in Austria, Finland, Greece, Italy, Spain and Sweden, due to the introduction of EU and national grants. The land being farmed organically in Europe has increased about eight times between 1987 and 1997, with Austria leading the way. The European Union's aim is to have 2.5 per cent of all farms in organic production by early this year while the Austrian government has set a target of 20 per cent. The Committee hearings made us aware that we should have started long before now to plan and build such a replacement system in Canada, in light of the strong evidence that chemical pesticides are detrimental to our environment, health and particularly our children's health.

We looked at the current system of regulating pesticides in Canada and we asked ourselves whether it is possible for one agency, the Pest Management Regulatory Agency (PMRA), to perform two virtually conflicting tasks, namely that of approving chemical pesticides as requested by industry while at the same time regulating them in order to protect human health. We asked ourselves whether it is possible to strike a balance between economic and health protection goals. The Minister of Health described the conflict himself on May 28, 1999 in Question Period when he said:

the PMRA has to balance public safety and environmental concerns against the needs of producers and growers.

We found, however, that pesticides are highly poisonous substances designed to kill living organisms and are thus potentially harmful to workers using them and to farming and urban communities unknowingly exposed as well as to consumers. Therefore, we asked ourselves whether a regulatory system could be designed that would give clear and absolute precedence to human health. Based on our findings, it must be designed as such.

The choice facing us is clear: either to continue with our chronic dependence on pesticides to the detriment of the environment, agricultural sustainability and human health or, to give public health protection clear precedence. We have already done so with tobacco, lead and asbestos. Pesticides should be next.

Charles Caccia
Member of Parliament for Davenport
Ottawa, May 2000