



TORONTO STAFF REPORT

March 7, 2003

To: Toronto Interdepartmental Environment (TIE) Committee

From: Arthur Beauregard, TIE Pesticides Sub-Committee Co-Chair
Monica Campbell, TIE Pesticides Sub-Committee Co-Chair

Subject: TIE Pesticides Sub-Committee: Status Report

Purpose:

The purpose of this report is to provide an update on the activities of the TIE Pesticides Sub-Committee in reducing outdoor pesticide use in Toronto.

Financial Implications and Impact Statement:

There are no direct financial implications arising from this report.

Recommendations:

It is recommended that:

- (1) the Commissioner of Works and Emergency Services as Chair of TIE ensure that all City Divisions are made aware of the City policy to phase out pesticide use on public green spaces and report their pesticide use to TIE on an annual basis; and
- (2) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting of December 16-17, 1998, City Council recommended the formation of a Toronto Interdepartmental Environment Pesticides Sub-Committee (TIE-PSC) to assist the Corporation of the City of Toronto in the development of a program to phase out its use of pesticides on public green spaces and to educate residents about reducing their exposure to pesticides. The TIE-PSC was convened in March 1999 and last submitted a status report in March 2000. The

committee meets on a regular basis to discuss strategies and progress made in achieving reductions in outdoor pesticide use on public lands and to develop public educational resources. The committee is comprised of city staff from Toronto Public Health (TPH), Economic Development, Culture and Tourism (EDCT), Works & Emergency Services (WES) and community members with expertise and commitment to reduce pesticide use. It is co-chaired by senior staff from TPH and EDCT (Parks and Recreation Division).

At the November 6, 2001 meeting, City Council considered a report from Toronto Board of Health (BOH) regarding the capacity of a municipality to regulate the non-essential outdoor use of pesticides. Council directed the TIE-PSC to determine public attitudes towards greater restriction on the non-essential outdoor use of pesticides on private property. The TIE-PSC was also directed to continue to identify alternatives to the outdoor use of chemical pesticides, continue to consult with organic and traditional lawn care companies regarding chemical phase out options and to submit recommended strategies to the Board of Health and other appropriate Standing Committees for consideration.

In addition, City Council directed the Board of Health and Toronto City Council to establish a Reference Group of Board members, Councillors, city staff and community representatives to engage in public consultation and provide input to the TIE-PSC. City Council also requested the Medical Officer of Health (MOH) to seek broad input on the nature and scope of a potential pesticides by-law. As the MOH had responsibility for leading the consultation process about a by-law, the TIE-PSC determined their role would be to provide input into the development of the process. Toronto Public Health concluded the consultation in October 2002 and reported the results of the process to the Board of Health at the November 18, 2002 Board of Health meeting.

This report summarizes the progress made by the City in reducing pesticide use on public green spaces, the educational efforts of the TIE-PSC and comments on Toronto Public Health's consultation process on strategies to reduce outdoor use of pesticides in Toronto.

Comments:

(a) Pesticide Phaseout Efforts on Public Green Spaces

EDCT (Parks and Recreation Division) and WES (Technical Services Division) have led the implementation of the city policy to phase out its use of pesticides on public green spaces. Parks and Recreation has achieved significant reductions in pesticide use since the policy was implemented in 1999. These reductions have been maintained, and in some cases improved upon since then. They have shared their expertise with others in the Corporation and subsequently WES has developed a workplan to phase out use on its public green spaces.

Phaseout Initiatives on Parks Greenspaces

Parks and Recreation utilizes Integrated Plant Health Care (IPHC) as its basic approach to parkland maintenance. IPHC is a multi-disciplinary approach to greenspace management. It effectively integrates an understanding of living systems, urban stresses, human needs and

horticultural principles in developing maintenance solutions that are environmentally sound, healthy and sustainable.

An IPHC strategy prioritizes overall plant health and is made up of the following 3 components:

- Plant Health Care as the primary approach involving the largest resource expenditure;
- Investigation of alternatives to traditional chemical pesticides in an attempt to manage pests without chemical pesticides;
- Integrated Pest Management (IPM) as the methodology to manage pests, as a small but important component of the overall parks maintenance program.

(See appendix A for a description of these components.)

Currently, Parks & Recreation has two full-scale demonstration sites (Earlscourt Park and Sunnybrook Park) that focus on plant health care practices and the prevention of pests. These sites are useful both in terms of informing maintenance practices on City parkland, as well as training and educational sites for staff, other City Departments and ABC's and the community in general.

Earlscourt Park is in its third year of the program and results to date have been excellent. The demonstration at Earlscourt involves the complete organic treatment (fertilizer, compost topdressing) combined with cultural practices on one of the two "high profile" soccer fields. Turf quality measured in terms of cover and density has improved to the point that weed cover is only about 5% of the field meaning that chemical herbicides would not be required.

The field has also shown improved resistance to stress caused by continuous play. As soil health improves and natural fertility becomes sustainable, it has also been possible to reduce fertilizer inputs. A community garden has been in operation for the last few years and a sunflower garden was planted last year.

Sunnybrook Park is in its second year as a demonstration site. Complete organic treatment is being employed on several of the sports fields. This approach combined with sound, standard cultural practices is showing the potential of providing a high quality turf-playing surface without the application of pesticides.

Weed control in parkland, particularly dandelions in general parkland, remains as a major challenge and as a primary source of complaint from the public. 2,4-D, the most common, effective pesticide used to control dandelions, has generally not been employed in City parks since 1999. Several pilot projects (Sugar Beet Extract, Corn Gluten Meal and Aquacide) have been initiated on City parkland to evaluate the performance of alternatives to chemical pesticides in order to address this concern.

Sugar Beet Extract was tested as an organic means of broadleaf weed control in turf, based upon claims by the manufacturer that this material would control weeds especially dandelion and plantain. Field trials conducted in 2002 produced very disappointing initial results. Costs for both purchasing and applying this product were also found to be prohibitive, when considered for

application to general parkland – the area where weed infestation is the biggest challenge. Additional testing will be conducted in 2003.

Corn Gluten Meal works by suppressing the development of new weeds by inhibiting seed germination. A trial conducted on a sports field in 2002 indicated that it was effective in controlling knotweed. Existing research suggests that corn gluten meal can suppress weeds (especially crabgrass). While these results are encouraging, they do not address the need to control broad-leafed weeds, primary dandelions, in turf. Full-scale trials using corn gluten meal to suppress weeds will continue in 2003 with particular emphasis on evaluating its effectiveness on dandelions. It should be noted that corn gluten meal is valuable as an organic fertilizer and soil enhancement product in addition to any weed suppression qualities it may have.

Aquacide treatment involves killing weeds using super heated water delivered much as a pesticide would be. A study compared the performance of Aquacide to the chemical herbicide glyphosate (brand name “Round-Up”) for the control of weeds in hard surfaces such as patios. Although results vary with the type of weed and time of year of application, the field study indicated that, in general, Aquacide required from two to three times the resource expenditure than would glyphosate to achieve the same level of weed control.

Parks and Recreation addressed corporate training needs by organizing two half-day seminars on plant health care and pesticide use reduction presented by international acclaimed author Carole Rubin. Participants included City of Toronto staff and ABC’s, private industry, community garden groups, horticultural societies and natural environment volunteer groups.

In 2002, Council funded a full time Program Standards and Development Officer to supervise the development and implementation of the Integrated Plant Health Care Program in Parks & Recreation. Roles include staying abreast of current research and development of training manuals and seminars for staff that can be exported across the corporation. For example, an IPM checklist will be developed as a user friendly tool facilitating the proper decision making process inherent in IPM, with the intention of reducing and eliminating unnecessary pesticide application.

Pesticide reduction efforts on Parks greenspaces are a working model for other Departments. In the process of implementing their program, WES further refined the model and is undertaking a pro-active role in implementing their pesticide use reduction program, beginning with data collection in 2002.

Phaseout Initiatives on WES Greenspaces

WES began implementing a workplan to phase-out the use of chemical pesticides on WES green spaces in 2002. WES has many facilities and locations that require greenspace management, including lawn and turf areas at Fire and Emergency Medical Service stations, Water and Waste water plants, Works yards, landfill sites and boulevards. As part of the pesticide phaseout workplan, WES consulted with the Parks and Recreation Division for advice on pesticide reduction strategies that had been previously undertaken by the division on public green spaces. From the discussion with Parks and Recreation it was recognized that direction from Senior

Management would result in a more effective strategy to be implemented for a chemical pesticide phase-out.

In December 2002, Senior Managers of the operating divisions were provided with background information on the pesticide reduction strategy and appointed a representative from their respective operating division to join the WES Pesticide Reduction Project Team. The role of the representatives was to:

- Compile a list of WES owned/managed facilities within their respective division;
- Distribute pesticide usage forms and facilitate information collection;
- Assist with the development and implementation of the pesticide phase-out program.

The first WES Pesticide Reduction Project Team was convened in January 2002 to introduce the project to the Operating Divisions and to inform representatives of their responsibilities. Data collection began soon after the first meeting in January including the development of a comprehensive list of WES properties and facilities where greenspace is managed or facilitated by the department. This initial step of identifying the locations and facilities where lawn maintenance is undertaken by City staff or contracted out by WES was an extensive and valuable step to the phase-out strategy. Unlike the Parks and Recreation Division, WES did not have a comprehensive list of facilities or locations where green space management is required, as green space management is not the core business of WES.

The next step in the process was the data collection phase of chemical pesticide use. The WES Pesticide Reduction Project Team representatives were responsible for identifying which locations or facilities from the newly created comprehensive list had chemical pesticides applied in the 2001 and 2002 season. This task proved to be challenging as many different city staff and contractors are responsible for the maintenance of green space and the application of chemical pesticides on WES properties. The information from 2001 and 2002 has been collected and is currently being verified and analyzed. Once analyzed, the data will form the baseline for the chemical pesticide phase-out to be developed by the WES Pesticide Reduction Project Team and reported on later in 2003.

WES and Parks and Recreation staff are working together to further pesticide reduction strategies within their departments and throughout the Corporation with several joint projects. Preliminary work has begun in the following areas:

- Standardization of data collection forms for pesticide use for the entire City;
- Centralized database management for all pesticide use on city property;
- Development of green space maintenance contractor specifications integrating IPHC principles;
- Design and deliver workshops to Parks and WES staff responsible for green space maintenance, with an emphasis on IPHC and alternatives to chemical pesticides.

It is recommended that these activities be supported through TIE and it be the mechanism by which pesticide use statistics across the corporation are compiled.

(b) Education and Communications

The TIE-PSC formed a work group to focus on education and communications. Committee members include staff from TPH, Parks and Recreation and WES as well as community members. The objective of the Communications Work Group (CWG) is to assist residents in making informed decisions about outdoor pesticide use with the goal of reducing their exposure to pesticides. Key messages include public health and environmental effects related to pesticide use and achieving pesticide reductions through sustainable gardening maintenance practices, including using alternatives to pesticides.

The CWG developed a graphic identifier and slogan for the pesticide reduction campaign in 1999. The slogan "Work with nature and nature works with you. Reduce Pesticides" is the message promoted in "The Green Guide to Healthy Lawn" brochures, pesticide-free lawn signs, the City of Toronto web pages and lawn telephone information line.

In 2001 and 2002, the work group distributed over 200,000 copies of the Green Guide brochure through the public libraries, community centres, community health centres and at events such as Canada Blooms, the City of Toronto's Environment Days, the Enviro Fest and at Toronto Public Health's pesticide by-law public consultation meetings. The group also mailed the brochure to veterinarians, family physicians and daycare centres. For 2003, the CWG plans to distribute widely across the City, 50,000 revised copies of the brochure. The Green Guide has been used by other Ontario municipalities as the basis of their educational material.

Pesticide-free lawn signs are available, free, on request for residents. The signs provide an opportunity for neighbours to discuss pesticide reduction in their neighbourhoods. WES provides a Composting Helpline and the Lawn Improvement Helpline to assist the public who have questions about improving their lawns with compost and other chemical-free alternatives.

The City's web site includes a new pesticide portal page that organizes information so that users can learn about growing a healthy lawn without pesticides. The web pages offer information about the health effects of pesticides and about Toronto's pesticide reduction strategy including the drafting of a potential pesticide by-law. People can read about what the City is doing to phase out pesticides use in City parks and green spaces and its plans to reduce or eliminate pesticides in rivers, streams and Lake Ontario as part of the stormwater pollution program.

Advertising is key in educating the community about reducing pesticide use. WES, in collaboration with the Communication Work Group, led two major advertising campaigns in 2001 and 2002. They placed ads in the large circulation and community newspapers, bus shelters, TTC (interior transit) and OMG garbage bins. The 2001 ads portrayed a lady bug with the message, "Let your lawn grow naturally, don't use pesticides." They developed a new look for the 2002 campaign with 2 different visuals, a flamingo and a garden gnome, with the key message "Using too many pesticides?"

Communication activities for 2003 build on the work to date. Advertising plans include renewed promotion of the flamingo and gnome campaign and a new ad in the City's TO FUN Guide. Toronto Public Health has dedicated a staff to expand the outreach program to the community.

The program will make use of the opportunities to build on other municipal initiatives. The work group is investigating the possibility of partnering with a water audit pilot program in WES in which educational material and advice will be delivered door-to-door. Community workshops/events are planned to promote healthy lawn care practices, including an event to highlight Earlscourt pesticide free demonstration site. Parks and Recreation are considering an award program for pesticide free gardens. The CWG will also explore opportunities to promote point of purchase educational material with pesticide retailers.

(c) Public Attitudes: Comments on Toronto Public Health's Public Consultation Process

The TIE-PSC was directed by Council to determine public attitudes towards greater restrictions on the non-essential outdoor use of pesticides and to recommend strategies to the Board of Health and other appropriate Standing Committee for consideration. Toronto Public Health had responsibility for leading the consultation process on a potential pesticides by-law and as such the TIE-PSC determined their role would be to provide input into the development of the process.

Toronto Public Health's year-long consultation process consisted of two stakeholder meetings, six public meetings, access to an on-line comment page, review of letters/emails and a City-wide telephone survey. Members of the TIE-PSC received presentations from TPH staff and were invited to participate in the stakeholder/public meetings. Members provided input on all aspects of the process. The Reference Group also provided comment on the public consultation process, including the survey and their feedback was considered by the TIE-PSC.

The TIE-PSC members reviewed the reports generated by the independent external consultants who recorded the results of the consultation meetings and conducted the telephone survey on behalf of TPH. There is agreement that the reports accurately reflect the input received at the meetings and on the whole, members of the TIE-PSC agree the survey methodology was appropriate and the findings were reliable.

The TIE-PSC has diverse representation including city staff, environmental non-governmental organizations and the lawn care industry. This mixed membership made it difficult to achieve consensus on the best mechanism (education or a by-law) by which to phase-out outdoor pesticide use in Toronto. For this reason, it was not possible to recommend strategies to restrict outdoor use of pesticides. However, almost all of the TIE-PSC members agreed that TPH's public consultation process was fair, comprehensive and inclusive of the diverse public and stakeholders views.

Conclusions:

There has been substantial progress made in reducing pesticides on City-owned lands and educating the public. Continued promotion of plant health care principles and exploration of alternatives to chemical pesticides will aid further pesticide reductions on city lands. In addition, public and staff education should continue to promote alternative practices to chemical pesticides.

EDCT (Parks and Recreation Division) and WES (Technical Services Division) have embraced the city policy to phase out pesticide use on public green spaces and other city departments and agencies, boards and commissions are encouraged to follow their lead. Departments are encouraged to make use of the expertise in these lead divisions in phasing out their use of pesticides.

Contacts:

Monica Campbell
Manager
Health Promotion and Environmental Protection Office
Toronto Public Health
Tel: (416) 338-8091
Fax: (416) 392-7418
Email: mcampbe2@toronto.ca

Arthur Beauregard
Manager Natural Environment and Horticulture
Parks and Recreation Division
Economic Development, Culture and Tourism
Tel: (416) 392-0724
Fax: (416) 392-6657
Email: abeaureg@toronto.ca

Monica Campbell
TIE Pesticides Sub-Committee Co-Chair

Arthur Beauregard
TIE Pesticides Sub-Committee Co-Chair

List of Attachments:

Appendix A: Integrated Plant Health Care Strategy Components

Appendix A

Integrated Plant Health Care Strategy Components

1) Plant Health Care

The goal of Plant Health Care is to establish and maintain optimum plant health. Specific cultural practices such as proper mowing and planting techniques, aerification and cultivation, topdressing, overseeding with select cultivars and soil amendment are all used to optimize plant health.

Plant health is a function of soil health and so many practices are directed at managing the physical, chemical and biological properties of the soil. A healthy soil has proper air and water infiltration, good structure and adequate amounts of nutrients and organic matter.

Plant health care provides the best opportunity to achieve an acceptable quality of service level for the public and includes all resources such as sports fields, golf courses, bowling greens, general parkland, gardens and conservatories.

The implementation of sound plant health care techniques has the significant added advantage of preventing pest problems. Anything that can be done to prevent pest problems makes it easier and more economical to maintain the appearance and function of the landscape in the future. Growing healthy plants is the key to having fewer pests. Instead of accepting pest attack as inevitable, the concept of plant health care recognizes that a pest problem is an indicator of an underlying plant health problem that needs to be addressed. A healthy plant is less susceptible to stress associated with pests and use and is in a position to recover fully and quickly when stress pressures occur.

2) Alternatives

Alternatives to traditional chemical pesticides do exist and become more effective once a foundation of plant health care is in place. These alternatives include products and materials to manage weed, insect and disease problems. In addition to pest control, some contribute to managing and improving soil health.

3) Integrated Pest Management (IPM)

Integrated Pest Management is implemented when pests exist in sufficient quantity so as to threaten elements in the parks green infrastructure. IPM is a decision making process that is used to select the best combination of management strategies in order to maintain, and when required, reduce pest populations to acceptable levels that protects resources. IPM recognizes that it is not necessary to completely eradicate all pests from the property but rather that it is important to achieve a balance between healthy plants and natural pests.

The IPM hierarchy of methods used to control pests is arranged so that alternatives are considered first before the decision making process moves on to traditional chemical pesticides. In following IPM protocol, these chemical pesticides are used only on a last resort basis. Further, these chemical pesticides are only used when they are most effective and in the smallest quantities possible. IPM delivered within the framework of IPHC provides the immediate opportunity for pesticide reduction.