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Healthy Lawns  
2004 Homeowner Survey Report  
to the  
Healthy Lawns Working Group

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## **EXECUTIVE SUMMARY**

In October 2000, the Pest Management Regulatory Agency (PMRA), the provinces and territories committed to a Federal/Provincial/Territorial (F/P/T) Healthy Lawns Strategy as part of Action Plan on Urban Use Pesticides announced by the Minister of Health. The objective of the strategy is to reduce reliance on pesticide use for lawn care through the application of Integrated Pest Management (IPM) principles, with particular emphasis on pest prevention, use of reduced risk products and the application of pesticides only when necessary.

One initiative under the Healthy Lawns Strategy is the development of training materials to educate homeowners on healthy lawn practices which minimize the need for pesticides. To communicate these, a Healthy Lawns Website was established, a *Healthy Lawn Tips* pocket folder was developed, and a series of seasonal lawn care articles was written.

The 2004 survey was conducted to determine whether the objectives of the homeowner communications activities under the Healthy Lawns Strategy are being achieved, and to gather information the F/P/T Healthy Lawns Working Group (HLWG) can use to adjust future communications with homeowners and better focus homeowner education efforts.

The survey was posted on the Home Gardeners page of the Healthy Lawns Website and a mail-back version was distributed by the PMRA Information Service. Participation was voluntary. The questions were developed around the Healthy Lawns Key Messages promoted on the Healthy Lawns Website and in the Healthy Lawns Tips pocket folder. Homeowners were questioned about their knowledge and use of healthy lawn practices, barriers to using these practices, and opinions about pesticide use reduction. Answer rankings were prepared for the knowledge questions and used to help analyze the results.

The findings of the Web-based and mail-back surveys were combined and 312 surveys were included in the final analysis. The data were analyzed based on a number of demographic, altitudinal, and behaviour factors including those who live in municipalities that restrict pesticides and those who don't; those who use a lawn care service provider and those who don't; and those who manage pests using weed and feed products and those who don't.

Homeowners from every province participated, including two from the Yukon Territory. Responses came from 142 unique municipalities. The average age of those who completed the survey was 41 for the Web-based version and 51 for the mail-back version. Proportionally, the mail-back survey reached more municipalities than Web-based version.

### **Key results**

The survey findings revealed that seven in ten homeowners mow high and leave the grass clippings on the lawn and about six in ten water deeply and infrequently. Avoidance of over

fertilizing, over seeding in the fall, and aerating in the fall were practices used least often by homeowners.

To manage pests, the majority of homeowners indicated they used pesticides only as necessary and about the same number indicated they used a weed and feed product. It appears that some homeowners may be unaware they are using a synthetic pesticide when using a weed and feed product. Homeowners who use weed and feed products to manage pests are more likely, than those who do not, to use a synthetic pest control product, however the number of responses was too small to firmly support this finding.

The findings suggest that the use of a lawn care company by homeowners reduces homeowners use of weed and feed products to manage pests. It also appears that municipal restrictions are affecting the choice of lawn care programs by homeowners. The majority of homeowners in municipalities with restrictions chose pesticide-free or reduced pesticide-use programs, whereas the majority of homeowners in municipalities without restrictions chose a regular lawn care program from their lawn care company.

Although homeowners exhibited a good knowledge of how to protect beneficial organisms in their lawns and named other techniques such as having a good mix of grass, four in ten had knowledge gaps and misconceptions suggesting that homeowners could be better educated about protecting beneficial organisms and re-educated about the use of other practices.

Lawn size appeared to affect the choice of pest management practices. Homeowners with large lawns indicated using a synthetic pest control product most often to manage pests whereas homeowners with average-size and small-size lawns chose this pest management practice the least. The survey also revealed that people living in homes with larger lawns were more likely than those with smaller lawns, to hire a professional lawn care company.

Few homeowners mentioned barriers to using healthy lawn care practices. Homeowners who responded to the Web-based survey indicated they were unsure what to do or when to do it, as their main reasons for not using healthy lawn care practices. In contrast, homeowners who completed the mail-back version of the survey indicated that using these practices involved too much work or that what they did was enough. These findings appear to be to age related, with those responding to the mail-back survey being, on average, ten years older than those completing the Web-based version.

Over half of the homeowners who chose to use a lawn care company in the past 12 months chose their company's pesticide-free, reduced-use, or other IPM-accredited or organic fertilizer program. These findings suggest that lawn care companies are either successfully marketing their alternate lawn care programs or homeowners are consciously choosing to reduce their use of pesticides.

The 2004 survey findings appear to indicate that homeowners have a lower tolerance for weeds than was suggested by the 2003 survey findings. It was not surprising to find that homeowners who use a lawn care company prefer to have no weeds on their lawn and those who don't use a lawn care company express more tolerance and acceptance of weeds. The findings also revealed that the larger the lawn is, the lower the tolerance and acceptance of weeds will be by homeowners.

The majority of homeowners who use weed and feed products felt they had too many weeds. Contrary to this, the majority of homeowners who don't use weed and feed products feel they didn't have too many weeds. This finding suggests that those who use weed and feed products accept fewer weeds.

Homeowners were split in attitudes toward municipal pesticide restrictions. From the comments received, it also appears that some are unaware of the enforcement and investigation services provided by municipal, provincial, and federal governments regarding suspected misuses of pesticides.

## **Recommendations**

Future homeowner education efforts under the Healthy Lawn Strategy should:

1. emphasize over seeding, aerating, and avoiding over fertilizing;
2. emphasize reducing reliance on pesticides as a way to protect beneficial organisms;
3. explain how to avoid improper use of fertilizer/herbicide combination products;
4. explain which healthy lawn care practices homeowners should use and when; and
5. reach homeowners who do not use the internet.

When it is appropriate to evaluate the effectiveness of these education efforts, it is recommended that future surveys should be launched early in the spring on the Website and include a mail-back version, launched at the same time, with a specified return date.

## 1.0 INTRODUCTION

### 1.1 The Program Context

In October 2000, the Pest Management Regulatory Agency (PMRA), the provinces and territories committed to a Federal/Provincial/Territorial (F/P/T) Healthy Lawns Strategy. This strategy is one component of the Action Plan on Urban Use Pesticides announced by the Minister of Health in October 2000. The objective of the strategy is to reduce reliance on pesticide use for lawn care through the application of Integrated Pest Management (IPM) principles, with particular emphasis on pest prevention, use of reduced risk products and application of pesticides only when necessary.

The main target audiences of the strategy are homeowners, lawn and landscape service providers, municipal parks managers, golf course managers, grounds keepers of school playing fields, and vendors of domestic class pesticides. To reach these target groups, a Healthy Lawns Website was launched in October 2000 to disseminate information about healthy lawn practices, to receive input from stakeholders on the development of risk reduction programs, and to report on training programs and progress. A report on the use of the Website appears in Annex A.

### 1.2 Homeowner Education

One initiative under the Healthy Lawns Strategy is the development of training materials and programs to educate homeowners on healthy lawn practices which minimize the need for pesticides. Key messages about healthy lawns were developed by the Healthy Lawns Working Group (HLWG), a partnership formed under the auspices of the F/P/T Committee on Pest Management and Pesticides, and posted on the Healthy Lawns Website in May 2002.

The *Healthy Lawn Tips* pocket folder was developed by the PMRA and distribution began in September 2002 through HLWG members and PMRA regional offices. Copies of the folder were also provided to approximately 1,300 members of the Canadian Federation of Municipalities in March 2003. In April 2003, it was also sent to stakeholders, associations, turf grass educators and garden writers, and posted on the Healthy Lawns Website. Copies were also distributed to individuals who contacted the PMRA 1-800 Information Service. A report on the distribution of the pocket folder to target groups identified in the Action Plan on Urban Use Pesticides is found in Annex B.

A series of three seasonal lawn care articles entitled the Healthy Lawns *NewsLine* was developed and posted on the Website in 2003. These articles were also distributed to garden writers and HLWG members in 2003. To date, no feedback on their use has been received. A *Read The Label* fact sheet was also developed by the PMRA and distributed in April 2004 to Health Canada and PMRA regional offices as well as HLWG members. A report on the distribution of this fact sheet is found in Annex C.

### 1.3 The 2003 Homeowner survey

In 2003 a pilot survey was conducted to:

1. test homeowners' knowledge of healthy lawn care practices;
2. gather homeowners' opinions about reducing reliance on pesticides for lawn care;
3. gather information about the lawn care practices that homeowners are using; and
4. determine if this approach gathers information that would allow the HLWG to evaluate and adjust their homeowner education activities.

The recommendations from the 2003 pilot survey were to:

1. conduct a similar survey next year;
2. launch it early in the Spring to increase participation;
3. consider increasing educational efforts on lawn ecology when updating the Healthy Lawns pocket tips folder; and
4. include segments of the population that are not reached through the Website and other communication channels in future surveys.

### 1.4 The Evaluation Context

This evaluation was done to determine whether the objectives of the homeowner communications activities under the Healthy Lawns Strategy are being achieved and to gather information to adjust future communications with homeowners. This study represents one element of an interim evaluation of the communications activities directed toward homeowners since 2000.

Communications activities to date have focussed on educating homeowners about healthy lawn practices which minimize the need for pesticides; namely pest prevention, use of reduced risk products, and the application of pesticides only when necessary. To improve the focus of future communications, information about the barriers homeowners have toward using healthy lawn practices was needed.

The objectives of the 2004 Healthy Lawns survey were to:

1. to assess Canadians' knowledge and use of healthy lawn practices;
2. identify barriers to using healthy lawn practices; and
3. gather opinions about pesticide use reduction.

Both the Healthy Lawns Website and Healthy Lawns pocket tips folder, the two principle communication tools of the Healthy Lawns Strategy, are scheduled to be revamped in 2005. The information gathered through this 2004 survey will be used by the F/P/T HLWG to better focus homeowner education initiatives to meet its goals under the Healthy Lawns Strategy.

## **2.0 SURVEY DESIGN AND METHODOLOGY**

### **2.1 Survey Design**

The 2004 survey questions (Annex D) were developed around the Healthy Lawns Key Messages promoted on the Healthy Lawns Website, in the Healthy Lawns Tips pocket folder, and through the Healthy Lawns *NewsLine* articles. To ensure that the content was understandable and would yield useful information, it was reviewed within the PMRA. The F/P/T Healthy Lawns Working Group and the Public Opinion Research and Evaluation Division of Health Canada's Communications, Marketing, and Consultation Directorate were also consulted on the content. Health Canada's Access to Information and Privacy Division was consulted and no privacy concerns were identified.

To assess homeowners' understanding and use of healthy lawn practices, participants were asked to indicate which healthy lawn practices they had used, and how they had managed pests in their lawn, within the past 12 months. A question about the use of weed and feed products which are synthetic fertilizer/herbicide combination products was also added. In response to a recommendation in the 2003 pilot Healthy Lawns survey (F/P/T HLWG 2003), participants were again asked about how to best protect beneficial organisms.

To identify barriers to using healthy lawn practices, those who chose not to use any of the recommended practices were asked to identify their reasons.

To determine homeowners' support for reduced reliance on pesticides, participants were asked whether or not they used a lawn care service provider and if so whether they selected reduced pesticide use programs. Homeowners were also asked about the average number of weeds per square metre they have in their lawns and whether or not they felt it was too many.

The questions about homeowners lawn care practices and the barriers they face were designed as multiple choice questions to allow homeowners to identify the full range of practices they use and the barriers they face. The same questions about province, municipality, and lawn size that were asked in 2003 were again asked in the 2004 survey and an optional question about the participants age was added.

### **2.2 Methodology**

For the Web-based version of the survey, the Business Line Improvement and Technology Development Division assisted with purchase of the same survey software that was used in 2003. They also posted the survey on the Healthy Lawns Website and assisted with the compilation and cross tabulation of the data.

The target population for this survey was Canadians who care for a lawn. To help ensure that this group participated in the survey, and reduce the possibility of others participating, the direct link



to the survey was placed only on the Home Gardeners page of the Healthy Lawns Website. An indirect link was placed on the Healthy Lawns Home page directing homeowners to the full survey announcement and link on the Home Gardeners page.

The artwork and descriptive text for the links to the Web-based survey were used to encourage homeowners to participate and were provided by the Publications section of the PMRA. Participation was strictly voluntary and advertising to encourage participation was not done to help ensure that a random sample of homeowners participated.

In line with the PMRA's "single window" policy for inquiries to the PMRA, a "Contact Us" link was provided to the Agency's Information Service in the opening paragraph and at the end of the survey for any participants with questions. Upon completion of the Web-based survey, participants were automatically directed to the Answer Page (see Annex E). Answer rankings were prepared (Annex F) for the knowledge questions and used to help analyze the results.

The electronic version of the survey was posted on the Healthy Lawns Website for three months from May 3<sup>rd</sup> to July 30<sup>th</sup> for a total of 89 days. During that time 300 homeowners participated and the HL Website hosted an average of 173 user sessions per day. This represents a response rate of 2%.

The mail back version of the survey was distributed by the PMRA Information Service for three months, Monday to Friday, from June 2<sup>nd</sup> to August 30<sup>th</sup>. It was included in mail-outs to anyone contacting the PMRA Information Service for whom the Information Service believed was a homeowner who cared for a lawn. During those 62 working days, 166 copies of surveys were distributed. Overall twenty mail-back responses were received, and of those only thirteen were received before the survey software licence expired. Only twelve of the thirteen responses were from individuals who indicated they cared for a lawn and could be included in the electronic analysis. Although the Agency was prepared to answer questions from the public regarding the survey, no one contacted the PMRA Information Service with questions about the 2004 survey.

The findings of the 300 Web-based and 12 mail-back surveys were combined. Comparisons were made between the responses of those who live in municipalities that restrict pesticides and those who don't; those who use a lawn care service provider and those who don't; those who manage pests using weed and feed products and those who don't; those who participated in the Web-based survey and those who participated in the mail-back survey; and those who have small, medium, and large-size lawns.

### 2.3 Limitations

The survey was completed by a segment of the population interested in learning about lawn care and who were personally motivated to visit the Healthy Lawns Website or contact the PMRA's Information Service. Potentially, environmental groups and lawn care companies could have

completed the Web-based survey thereby introducing biases, however the biases of these two groups would tend to cancel each other out.

Thirteen of the 300 Web-based surveys received were incomplete and several respondents to the mail-back survey skipped questions they should have answered. These factors were taken into account in the analysis of the findings.

Twenty mail-back surveys were received after the licence for the survey software expired. Consequently they were not included in the electronic analysis. They were however examined and are discussed separately in this report.

Response rates for Web surveys typically range from 7 to 44 percent (Schonlau et al, 2001) depending on the degree of recruitment used. The low response rate seen in this survey is partly due to the non-targeted approach to soliciting participants. In choosing not to solicit participants, it was hoped that participation would be random and representative of the Canadian homeowner population. However, since voluntary participation doesn't necessarily guarantee getting a random sample, there may be some self selection bias at work.

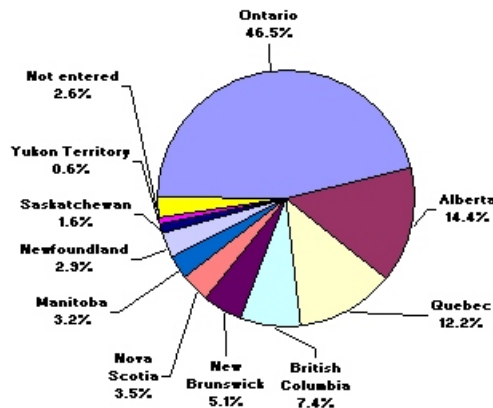
### 3.0 FINDINGS

The survey findings are organized according to who participated, knowledge and use of healthy lawn practices, barriers to using healthy lawn practices, and opinions about pesticide use reduction.

#### 3.1 Who participated

Homeowners from ten provinces and one territory participated in the internet and mail-back versions of this survey for a total of 312 respondents. The majority, almost half, were from Ontario, followed by Alberta, Quebec and British Columbia (see Figure 1).

Figure 1



Over ninety percent of respondents voluntarily identified the municipality in which they live, naming 142 distinct municipalities.

Participants ranged in age from 16 to 74. The average and median age of those who completed the Web-based survey was 41. The average age of those who completed the mail-back survey was 51 and the median age was 50.

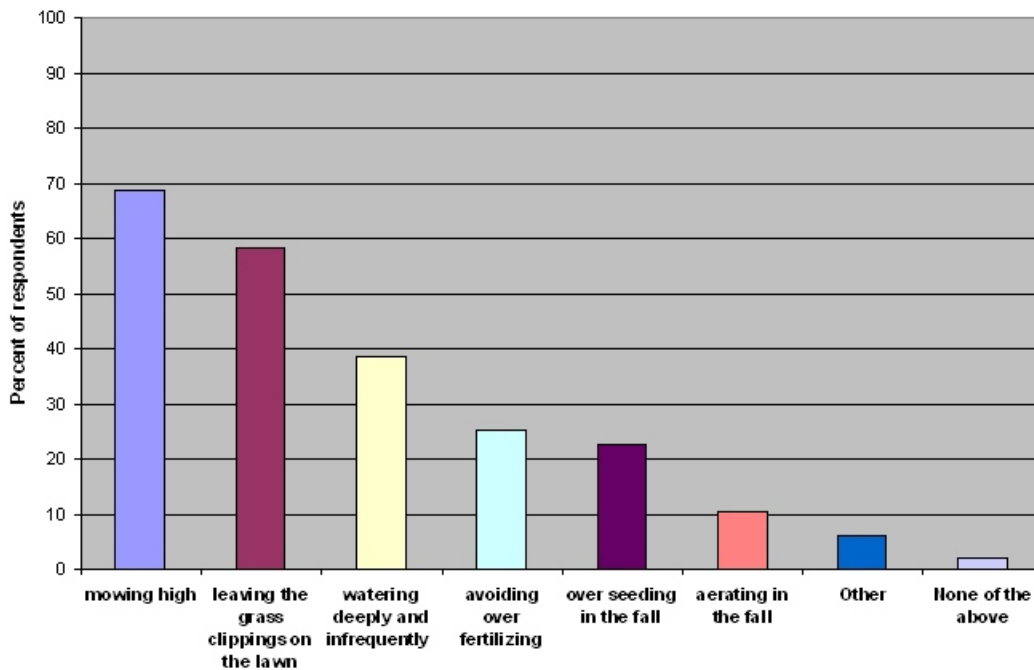
The majority (seven in ten) homeowners indicated they had a medium-size average residential lawn. Just over one in ten indicated they had either a small or large lawn. Others indicated they had something else said their lawns were larger than average size.

### 3.2 Knowledge and Use of Healthy Lawn Practices

#### 3.2.1 Use of lawn care practices

The majority of respondents, eight in ten, indicated that they do not use a lawn care service provider. In response to this multiple choice question, these respondents identified the lawn care practices they had used in the past 12 months. About seven in ten indicated they mow high and leave the grass clippings on the lawn while about six in ten water deeply and infrequently. Four in ten reported avoiding over fertilization while over seeding and aerating in the fall were practices used by only about a quarter of respondents (see Figure 2).

Figure 2



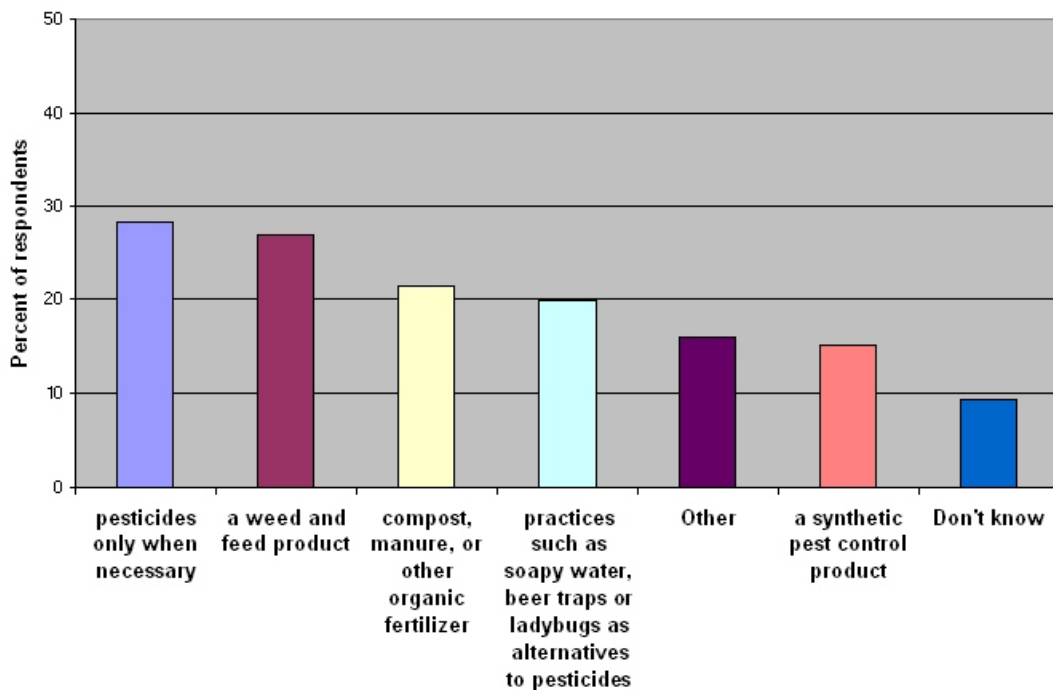
Respondents to the mail-back survey exhibited lawn maintenance practices and rates of selecting a lawn care company similar to those surveyed on the Web. Their pest management practices and knowledge of how to protect beneficial organisms in their lawn were also similar.

One in ten respondents described other practices they used when providing comments. Aerating and overseeding in the spring were mentioned most often, followed by top dressing, and using pesticides. Mulching, raking, hand weeding as well as using alternative ground cover were also mentioned. A few indicated that they were starting a new lawn or fixing a patch of lawn. Other practices mentioned include mycorrhizae application; spreading compost; and not mowing during a drought. Some questionable practices were also provided. For example, the misconception that mowing low in spring will drive roots down into the soil was also mentioned.

### 3.2.2 Managing pests

When asked how they had managed pests within the past 12 months, over one quarter indicated they had used pesticides only when necessary, and another quarter indicated they had used a weed and feed product (see Figure 3). One fifth of respondents used compost, manure, or other organic fertilizer and another fifth used practices such as soapy water, beer traps or ladybugs as alternatives to pesticides. Only one in ten homeowners indicated they had used a synthetic pesticide in the past 12 months.

Figure 3



About one in ten homeowners indicated they used other methods and provided comments. Of those who indicated they had used other techniques to manage pests, most said they had weeded by hand. Other techniques mentioned included using boiling water, corn gluten meal, nematodes, tilling, and vacuuming.

Of the homeowners who use a lawn care company, the majority (six in ten) reported using pesticides only when necessary to manage pests; and three in ten reported using either a synthetic pest control product or compost, manure or other organic fertilizer. Of the homeowners who do not use a lawn care company, most (three in ten) reported using a weed and feed product to manage pests; and about one in ten reported using a synthetic pest control product.

One third of homeowners in municipalities that restrict pesticides manage pests using compost, manure, or other organic fertilizer. One third of homeowners in municipalities that do not have a pesticide-use restriction or don't know if their municipality has a restriction, indicated they use a weed and feed product to manage pests.

### 3.2.3 Knowledge of lawn ecology

When asked to identify the best ways to protect beneficial insects and earthworms in their lawns, over half of homeowners correctly identified reducing the use of insecticides as one of the best ways. About one quarter of homeowners correctly identified reducing the use of fungicides and avoiding over watering as the other ways to protect beneficial organisms and earthworms.

Over one third of respondents indicated that they did not know how to protect beneficial organisms. About one fifth of respondents incorrectly identified laying stones in high traffic areas as a method that would protect these organisms. About one in ten respondents also incorrectly identified either fertilizing frequently or broadcast spraying of pesticides as good methods of protection.

A few commented and indicated they used other techniques to protect beneficial organisms. They identified using Integrated Pest Management (IPM), maintaining a healthy lawn, leaving lawn clippings on the lawn, and having a good mix of grass with white clover in it. A few felt this was a biased question commenting that beneficial organisms are not harmed if pesticides are used according to pesticide label directions.

### 3.2.4 Lawn size

Homeowners tended to use the same lawn maintenance practices regardless of their lawn size and mentioned mowing high, leaving grass clippings on the lawn, and watering deeply and infrequently, as the three practices used most often in the past 12 months.

Of the three top pest management practices mentioned, homeowners with large lawns are most likely to use a synthetic pest control product. Homeowners with average-size residential lawns

are most likely to use a weed and feed product, and homeowners with small-size lawns are most likely to use pesticides only when necessary. Homeowners with average-size or small-size lawns chose synthetic pesticides the least.

### 3.2.5 Use of weed and feed products

The responses of those who use weed and feed (synthetic fertilizer-herbicide combination) products to manage pests were compared to those who do not. In both groups, three in ten homeowners indicated they used pesticides only when necessary. Of those who used weed and feed products, two in ten chose a synthetic pesticide. Of those who don't use weed and feed products only one in ten chose a synthetic pesticide.

### 3.3 Barriers to Using Healthy Lawn Practices

Only one in twenty survey respondents indicated they had not used any of the six healthy lawn practices listed in question 2a (see Annex D), within the past 12 months. Those who responded to the Web-based survey indicated they were unsure what to do (0.4 in ten), unsure when to do it (0.2 in ten), or that it costs too much (0.1 in ten).

Homeowners who completed the mail-back version of the survey indicated that using these practices involves too much work (two in ten), that what they did was enough (two in ten), and that it takes too much time (one in ten).

### 3.4 Opinions About Pesticide Use Reduction

#### 3.4.1 Use of a lawn care service provider

One in five homeowners chose to use a lawn care service provider in the past 12 months. More than one third of these homeowners chose their lawn care company's regular program that includes spraying pesticides. Just under one third of these homeowners chose the pesticide-free program. About one quarter of these homeowners chose a reduced pesticide-use, IPM-accredited or organic fertilizer program. Fewer than one in ten indicated they didn't know which program they had selected.

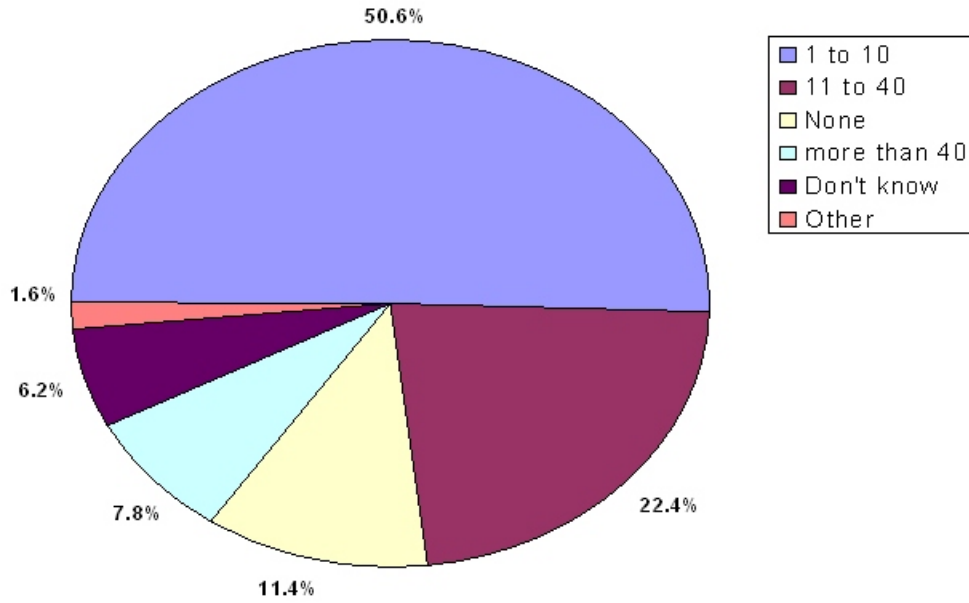
Of those who chose their lawn care company's regular program, over half did so because they felt it works best. About a quarter of these homeowners chose the regular lawn care program because their lawn had serious weed or insect problems. Another quarter chose it because it costs less than other programs offered.

#### 3.4.2 Acceptance of weeds

When homeowners were asked about the average number of weeds they had and how they felt about it. The majority (six in ten) indicated they had only 1 to 10 weeds per square metre or none.

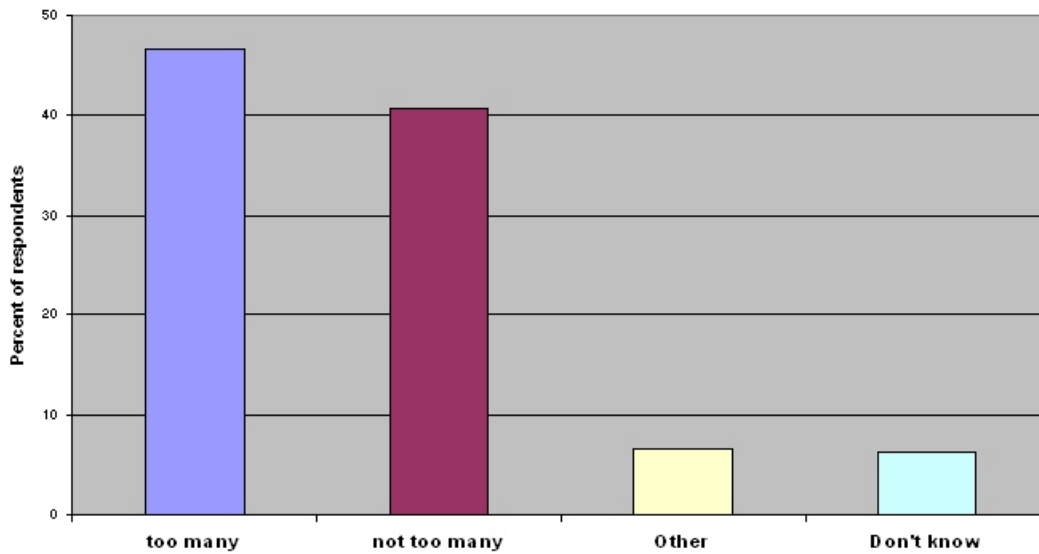
About three in ten homeowners indicated they had between 11 and 40 weeds per square metre or more than 40 weeds per square (see Figure 4).

Figure 4



When asked what they felt about the average number of weeds they had, almost half of the homeowners surveyed felt they had too many weeds (see Figure 5).

Figure 5



The responses of homeowners who use a lawn care company were compared to those who do not. The majority of respondents, eight in ten, who use a lawn care company estimated they had only 1 to 10 weeds per square metre or none. Just over half of these homeowners felt they didn't have too many weeds.

The majority of respondents, six in ten, who indicated they didn't use a lawn care company estimated they had 1 to 10 weeds per square metre to none. Half of these homeowners felt they had too many weeds.

### 3.4.3 Municipal pesticide use restrictions

The majority of homeowners (three fifths) indicated their municipality did not restrict, or had not yet restricted, the use of pesticides, one fifth indicated their municipality did, and another fifth indicated they didn't know. Homeowners in five provinces (Ontario, Quebec, Nova Scotia, Alberta and British Columbia) indicated that their municipality restricted pesticide use. Half these homeowners were from Ontario, a third were from Quebec, and almost a quarter were from Nova Scotia.

When asked whether or not their municipality restricts pesticides, one in ten respondents chose to provide comments. Their opinions on use restrictions were strong and divided. Those in favour of restrictions expressed concern about pesticide use by their neighbours and the failure of condominium corporations to comply with the restrictions. Those not in favour of restrictions expressed concern about their city council deliberations, suggesting they were uninformed and not science-based.

The responses of homeowners who indicated their municipality restricted pesticide-use or indicated they didn't know, were compared to those who's municipality does not have restrictions. The majority (over half) of homeowners in municipalities with restrictions chose pesticide-free or reduced pesticide-use programs, whereas the majority (over one third) of homeowners in municipalities without restrictions chose a regular lawn care program from their lawn care company.

### 3.4.4 Lawn size

The majority (seven in ten) homeowners indicated they had an average residential lot. About two in ten indicated they had a large country estate or larger than average size lot, and one in ten indicated they had a typical townhouse or garden home-size lawn. About one in five homeowners with medium-size or large-size lawns chose to use a lawn care company in the past 12 months, whereas only one in ten homeowners with small lawns chose to do the same.

Over half of homeowners with small and medium-size lawns chose their lawn care company's pesticide-free or reduced-use program whereas over half of homeowners with large-size or larger



than average-size lawns chose the regular lawn care program from their lawn care service provider in the past 12 months.

Homeowners with small and medium size yards estimated they had fewer weeds per square metre than those with larger yards. About two thirds of these homeowners with small and medium-size lawns reported they had no weeds or only one to 10 per square metre. Half of the homeowners with large-size and larger than average-size lawns reported having no weeds or only one to 10 per square metre.

Just under half of homeowners with small and medium size yards felt they had too many weeds whereas, just over half of the homeowners with large-size and larger than average-size lawns felt they had too many weeds.

#### 3.4.5 Use of weed and feed products

Seven in ten homeowners who use weed and feed products reported having either zero to ten or no weeds per square metre. In contrast, six in ten homeowners who do not use weed and feed products reported having zero to ten or no weeds per square metre. Although users of weed and feed products reported had fewer weeds than those who do not, over half of them felt they had too many weeds. Of the homeowners who reported they didn't use weed and feed products, fewer than half felt they had too many weeds on their lawn.

## 4.0 DISCUSSION AND CONCLUSION

### 4.1 Participation

Participation in the 2004 Healthy Lawn Homeowner survey was greater than in 2003 pilot Homeowner survey, increasing from 185 respondents to 300 for the Web-based version. Launching the survey in early May, as opposed to late June and running it during a three month period where there were more user sessions, appears to have increased participation by homeowners.

Since there are approximately 3,800 municipalities in Canada, the survey is representative of 4% of all municipalities. For reasons such as size, location, and budget constraints, only approximately 1,200 municipalities choose to become members of the Canadian Federation of Municipalities (Personal Communication, 2004). The survey response rate could be interpreted as being as high as 12%.

From the distribution of participants it appears that participation was representative of the Canadian population, with the largest number of responses coming from the most populated provinces.

Having a mail-back version of the survey to complement the Web-based version appeared to improve the quality of the 2004 survey data. It allowed the survey to reflect the knowledge, opinions, and practices of a wider range of Canadians who care for a lawn than the 2003 survey that used only a web-based version.

This first attempt at conducting a mail-back survey however provided many “lessons learned”. Launching it a month after the Web-based version and not including a return date resulted in several surveys not being included in the electronic analysis. An examination of the twenty mail-back surveys that were not included in the electronic analysis revealed that homeowners in that group were aged 30 to 77 years and their average age was 53. This supports the finding that this is an older group than the respondents who completed the Web-based version.

#### 4.2 Knowledge and Use of Healthy Lawn Practices

The 2003 Healthy Lawns pilot homeowner survey revealed that the majority of homeowners understood some or all of the Healthy Lawns key messages, however the 2004 survey findings suggest homeowners do not actually use these practices to the same extent. Fewer than half of homeowners indicated they avoid over fertilizing, only one quarter said they aerated their lawns, and only one homeowner commented that they dethatched their lawn. This finding is supported by the findings of a 1994 survey of suburban lawn care practices in Northern Virginia (Aveni, 1994). In that survey, it was revealed that although 79% of suburban lawns had been fertilized in the past year, less than 20% of residents had tested their soil to determine whether or not their yard actually needed fertilization. Additionally, the 1994 survey respondents indicated they had little interest in non-chemical lawn care practices such as aeration and dethatching.

In both the 2003 and 2004 Healthy Lawn surveys, about one in ten homeowners indicated they used lawn care practices other than those recommended on the Healthy Lawns Website. Some of the other practices reported in the 2004 survey included sophisticated techniques such as mycorrhizae application.

When homeowners were asked about the practices they used to manage pests, over one quarter indicated they used pesticides only as necessary and about the same number indicated they used a weed and feed product. This suggests that some homeowners may be unaware they are using a synthetic pesticide when using a weed and feed product. This finding is supported by the findings of a survey conducted in the City of Ottawa in 2004. Researchers (Lanthrop and St Jean, 2004) found that although one-fifth of Ottawa residents did not acknowledge using pesticides, these same homeowners indicated they used a weed control and fertilizer combination product. Similarly, in a poll of residents of Waterloo, Ontario (Metroline Research Group Inc. 2000), it was revealed that few members of the general population consider weed control products to come under the umbrella definition of pesticides.

Homeowners who do not use a lawn care company will most often manage pests using a weed and feed product whereas those who use a lawn care company will use a weed and feed product

least. It appears that the use of a lawn care company by homeowners could be reducing homeowners' use of weed and feed products to manage pests.

It appears that municipal restrictions may be encouraging reduced use of weed and feed products. In municipalities where there are restrictions on pesticide use, most homeowners use compost, manure, or other organic fertilizer to manage pests. In municipalities that do not have a pesticide-use restriction, or where homeowners don't know if their municipality has a restriction, most homeowners indicated they use a weed and feed product to manage pests.

While most homeowners exhibited a good knowledge of how to protect beneficial organisms, a large group (four in ten) had knowledge gaps and misconceptions. The findings suggest that some homeowners could be better educated about protecting beneficial organisms and re-educated about the use of other practices.

Regardless of the size of their lawns, homeowners indicated they used the same top three lawn maintenance practices of mowing high, leaving the grass clippings on the lawn, and watering deeply and infrequently. While these three approaches are becoming ingrained among homeowners, other healthy lawn practices are not.

Lawn size appeared to affect the choice of pest management practices. Homeowners with large lawns indicated using a synthetic pest control product most often to manage pests whereas homeowners with average-size and small-size lawns chose this pest management practice the least. This finding is supported by the results of a Toronto lawn pesticide survey (Basrur 2002). The Toronto survey revealed that lawns, exclusively cared for by householders, were more likely to be treated with chemical pesticides if they were larger, and less likely if they were smaller.

Finally, when the pest management practices of those who use weed and feed products were compared to practices of those who do not use these products, the findings suggest that a third of those who use weed and feed products do not realize they are using a synthetic pesticide. The findings also suggest that those who use weed and feed will more often choose to use a synthetic pesticide than those who do not use these products however, the sample size was too small to firmly support this finding.

#### 4.3 Barriers to Using Healthy Lawn Practices

It appears there are few barriers to using healthy lawn care practices since only one in twenty survey respondents indicated they had not used any of the six healthy lawn practices listed in question 2a (see Annex D) within the past 12 months.

It was interesting to note that homeowners who responded to the Web-based survey indicated they were unsure what to do or when to do it, as their main reasons for not using healthy lawn care practices. In contrast, the small number of homeowners who completed the mail-back version of the survey indicated that using these practices involved too much work or that what

they did was enough. These findings appear to be related to the age profiles of these two groups. Those responding to the mail-back survey were, on average, about ten years older than those completing the Web-based version.

#### 4.4 Opinions About Pesticide Use Reduction

Over half of the homeowners who chose to use a lawn care company in the past 12 months chose their company's pesticide-free, reduced-use, organic fertilizer, or other IPM-accredited program. These findings suggest that lawn care companies are either successfully marketing their alternate lawn care programs or homeowners are consciously choosing to reduce their use of pesticides.

When the opinions of homeowners who use a lawn care company were compared to those who do not, half the homeowners in both groups felt they did not have too many weeds. However, those who use a lawn care company did indicate they preferred to have no weeds on their lawn and those who don't use a lawn care company indicated more tolerance and acceptance of weeds in their comments.

The 2003 Healthy Lawns pilot homeowner survey suggested that homeowners have a high tolerance for weeds. However, in 2004, the survey results appear to indicate that homeowners have a lower tolerance for weeds than was suggested by the 2003 survey findings.

The Healthy Lawn survey results in both 2003 and 2004 indicate that homeowners with large, and larger than average size lawns, felt they had too many weeds. It appears that the larger a lawn is, the lower the tolerance and acceptance of weeds will be by homeowners.

When asked whether or not their municipality restricts the use of pesticides, homeowners in five provinces indicated restrictions existed. Through the Canadian Coalition for Health and Environment, the Agency is aware of the restrictions, and proposed restrictions, in all provinces participants named except Alberta (Canadian Coalition for Health and the Environment, 2004). It appears that a few homeowners do not have accurate information about local pesticide restrictions that exist.

Comments received in response to this question were split between support and lack of support for restrictions. Restrictions are regarded favourably by homeowners who have concerns about the pesticide use of others. Restrictions are not regarded favourably by homeowners who feel their city council's deliberations regarding pesticide-use restrictions were uninformed and not science based. This split in attitudes was also reported in a recent survey of public views on pesticides (Ipsos-Reid 2004) that showed respondents were divided in their attitudes toward the safety of pesticides. From the complaints homeowners described, it appears that a few are unaware of the enforcement and investigation services provided by municipal, provincial, and federal governments regarding suspected misuses of pesticides.

The 2004 survey findings suggest that municipal pesticide-use restrictions are affecting the selection of lawn care program by homeowners who use a lawn care company. The majority (over half) of homeowners in municipalities with restrictions chose pesticide-free or reduced pesticide-use programs from their lawn care company, and most (over one third) of homeowners in municipalities without restrictions chose a regular lawn care program.

The findings revealed that homeowners with large and “larger than average-size” lawns chose to use the services of a lawn care company more often than those with small-size lawns. It is interesting to note is that the majority of homeowners with large, and “larger than average-size”, lawns chose their lawn care company’s regular lawn care program whereas the majority of homeowners with small and medium-size lawns chose their lawn care company’s pesticide-free or reduced-use program in the past 12 months. This finding is supported by the results of the Toronto lawn pesticide survey (Basrur, 2002). That survey revealed that people living in homes with larger lawns were more likely than those with smaller lawns, to hire a professional lawn care company.

Although homeowners who use weed and feed products reported having fewer weeds than those who do not, over half of them felt they had too many. Contrary to this, fewer than half of homeowners who don’t use weed and feed products feel they had too many weeds. This finding suggests that those who use weed and feed products accept fewer weeds. It also highlights the possibility that weed and feed products are not being applied properly.

## **5.0 RECOMMENDATIONS**

In no particular order of priority, homeowner education efforts should:

1. emphasize over seeding, aerating, and avoiding over fertilizing;
2. emphasize reducing reliance on pesticides as a way to protect beneficial organisms;
3. explain how to avoid improper use of fertilizer/herbicide combination products;
- 4 explain which healthy lawn care practices homeowners should use and when; and
5. reach homeowners who do not use the internet.

When it is appropriate to evaluate the effectiveness of these education efforts, it is recommended that future surveys should be launched early in the spring on the Website and include a mail-back version, launched at the same time, with a specified return date.

## 6.0 REFERENCES

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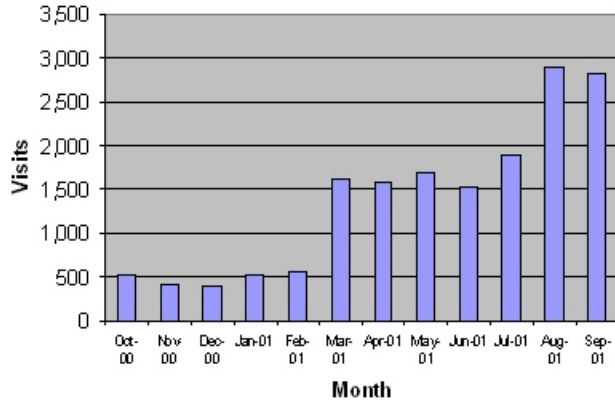
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Schonlau, M., R. D. Fricker, and Marc N. Elliot Jr. 2001. Conducting Research Surveys via E-mail and the Web. <http://www.rand.org/publications/MR/MR1480/> Rand 118 pp.

## 7.0 ANNEXES

### ANNEX A USE OF THE HEALTHY LAWN'S WEB SITE

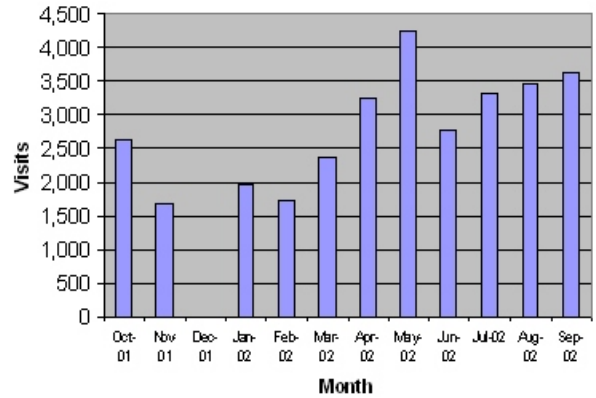


October 2000 to September 2001

Average number of page views/visit = 3.4

Average length of visit = 2 min. 43 sec.

Total visits = 16,377



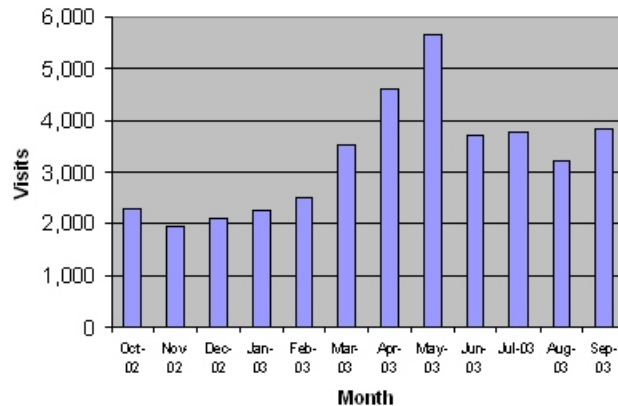
October 2001 to September 2002

\* Average number of page views/visit = 2.5

\* Average length of visit = 2 min. 8 sec.

\* Total visits = 31,038

\* Based on 11 months of data



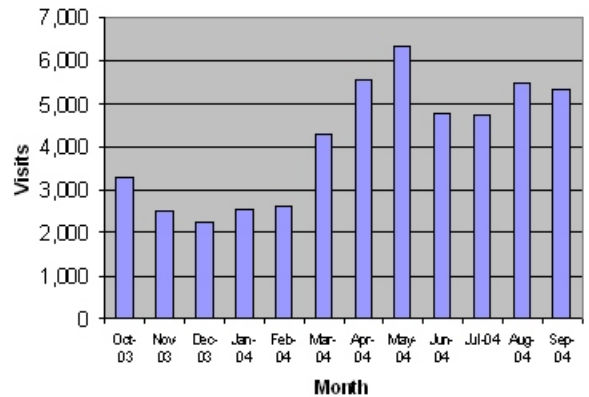
October 2002 to September 2003

Average number of page views/visit = 2.8

\*\*Average length of visit = 6 min. 35 sec.

Total visits = 39,400

\*\* Based on 8 months of data



October 2003 to September 2004

Average number of page views/visit = 3.4

Average length of visit = 8 min. 25 sec.

Total visits = 49,697

ANNEX B DISTRIBUTION OF *Healthy Lawns Tips*

<b>Location</b>	<b>Number Distributed</b>		
	Sept. - Dec. '02	Jan. - Dec. '03	Jan. - Oct. '04
Provinces via HLWG members	18720	10880	3000
PMRA and Health Canada Regional Offices	1135	10240	1400
PMRA Publication centre	80	1560	1190
PMRA Call centre	80	1460	800
National Capital Commission	10	–	–
Garden Writers	–	–	110
Provincial Ministries and Boards of Health	3005	–	–
Department of National Defence - Canadian Forces Housing Association	–	17000	–
Private companies, organizations, and associations	–	–	3520
Municipalities	–	2860	7980
<b>TOTAL</b>	<b>23030</b>	<b>44000</b>	<b>18000</b>



ANNEX C DISTRIBUTION OF *Aim for Safety – Read the Label*

<b>Number Distributed*</b>				
<b>Location</b>	<b>Folded</b>		<b>Laminated</b>	
	<b>English</b>	<b>French</b>	<b>English</b>	<b>French</b>
Provinces via HLWG members	1432	160	68	17
PMRA and Health Canada Regional Offices	2340	610	140	48
<b>TOTAL</b>	<b>3772</b>	<b>770</b>	<b>208</b>	<b>65</b>

\* as of November 25<sup>th</sup>, 2004

## ANNEX D HEALTHY LAWNS 2004 HOMEOWNER SURVEY

Dear Homeowner -

Health Canada's Pest Management Regulatory Agency (PMRA), in partnership with the provincial and territorial governments, has been encouraging homeowners to adopt healthy lawn care practices aimed at reducing reliance on pesticide use for lawn care.

This 2004 survey will assess your use of lawn care practices and gather your opinions. The survey findings will be used by the Federal/Provincial/Territorial Healthy Lawns Working Group to focus future activities aimed at homeowners.

This confidential survey is intended for homeowners and anyone who maintains a private lawn. If you have any questions, please contact us.

Your participation is greatly appreciated!

1a) I use a lawn care service provider or company to maintain my lawn.

- Yes (go to question 1b)
- No (go to question 2a)

1b) Within the past 12 months, I chose my lawn care company's:

- regular program that includes spraying pesticides (go to question 1c)
- reduced pesticide use program that uses pesticides only in certain circumstances
- pesticides free program that uses no pesticides
- Other? Please specify \_\_\_\_\_
- Don't know

1c) I chose my lawn care company's regular program because: (check as many as apply)

- it costs less than other programs offered
- it works best
- I was not provided with enough information to make an informed decision
- Other? Please specify \_\_\_\_\_
- Don't know

2a) Within the past 12 months, I have maintained my lawn by: (check as many as apply)

- watering deeply and infrequently
- over seeding in the fall
- aerating in the fall
- mowing high
- leaving the grass clippings on the lawn
- avoiding over fertilizing
- None of the above (go to question 2b)

- Other? Please specify \_\_\_\_\_
- Don't know

2b) I have not used any of the above mentioned practices in the past 12 months, because: (check as many as apply)

- what I do now is enough
- I am unsure what to do
- I am unsure when to do it
- I don't have the right equipment
- I don't have the right products
- it involves too much work
- it takes too much time
- it costs too much
- Other? Please specify \_\_\_\_\_

3) The average number of weeds per square metre, I have in my lawn is about:

- None
- 1 to 10
- 11 to 40
- more than 40
- Other? Please specify \_\_\_\_\_
- Don't know

4) I feel this is:

- too many
- not too many
- Other? Please specify \_\_\_\_\_
- Don't know

5) Within the past 12 months, I have managed pests in my lawn by using: (check as many as apply)

- compost, manure, or other organic fertilizer
- a weed and feed product
- a synthetic pest control product
- practices such as soapy water, beer traps or ladybugs as alternatives to pesticides
- pesticides only when necessary
- Other? Please specify \_\_\_\_\_
- Don't know

6) Some of the best ways to protect beneficial insects and earthworms in my lawn is to: (check as many as apply)

- lay stones in high traffic areas
- reduce the use of insecticides

- fertilize frequently
- reduce the use of fungicides
- broadcast (full coverage) spray pesticides
- avoid over watering
- Other? Please specify \_\_\_\_\_
- Don't know

7) My lawn is:

- small-size - typical townhouse or garden home
- medium-size - average residential
- large-size - country estate
- Other? Please specify: \_\_\_\_\_

8) My municipality restricts the use of pesticides

- Yes
- No
- Don't know

Comments?

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9) Please tell us where you live:

[Province/territory - drop-down list of choices]

10) Please tell us which municipality you live in -

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OPTIONAL

11) Please tell us how old you are -

\_\_\_\_\_ Age (number of years)

SEND BUTTON

Thank you for participating!

Any questions, please contact us.

ANNEX E HEALTHY LAWNS - 2004 HOMEOWNER SURVEY - ANSWER PAGE

6) Some of the best ways to protect beneficial insects and earthworms in my lawn is to:

Reduce the use of insecticides

Reduce the use of fungicides

Avoid over watering

No right or wrong answers for the opinion and participant profile questions.

Thanks again for participating in our survey!

View our Healthy Lawn Tips at <http://www.healthylawns.net>

ANNEX F HEALTHY LAWNS - 2004 HOMEOWNER SURVEY - ANSWER RANKINGS

*The rankings are applied to assist with the reporting of the findings. This survey gathers information about knowledge, opinions and practices. The entire questionnaire allows for "other" responses. This will allow the HLWG to determine if homeowners are using practices other than those being promoted by the HLWG.*

Rankings: ++ = correct, + = partly correct, 0 = neutral, - = partly incorrect, - - = incorrect

There are no right or wrong answers for questions about:

- the profile of participants (1a, 1b, 1c, 7, 8, 9, 10, 11)
- practices of participants (2a, 2b, 5)
- opinions of participants (3, 4)

6) Some of the best ways to protect beneficial insects and earthworms in my lawn is to: (check as many as apply) *Responses to this question will allow the HLWG to determine how much homeowners understand about Healthy Lawns key messages around Lawn Ecology, only certain messages, or none. Responses to this question will be compared to the previous year's findings.*

- lay stones in high traffic areas ( - )
- reduce the use of insecticides ( + )
- fertilize frequently ( - )
- reduce the use of fungicides ( + )
- broadcast (full coverage) spray pesticides ( - - )
- avoid over watering ( + )
- Other? Please specify \_\_\_\_\_(0)
- Don't know ( - - )