

Atlantic Regional Library  
Environment Canada

DEC 19 2000

Bibliothèque de la région  
de l'Atlantique  
Environnement Canada

Environment  
Canada Environnement  
Canada

# Alternatives to pesticides

ENVIRONMENT CANADA LIBRARY  
15th Floor, Queen Square  
45 Alderney Drive  
Dartmouth, N.S. B2Y 2H6  
CANADA

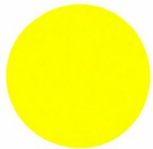
## Lawn care

Dartmouth Env. Can. Lib./Bib.



39 015 555

SB  
950



Everyone wants a healthy green lawn. We also tend to want immediate results with little effort, and all too often pesticides are a fast and easy solution to the problem of weeds, disease and insects. Other solutions that are less harmful to the environment and our health are available, however. In the days before spraying programs existed, people still managed to have beautiful lawns.

Chemical-free methods may take more time and effort, since they require frequent inspections of the lawn and the development of new habits, but in the long run, the grass will be more resistant to pathogens and less toxic to humans. You can use alternative pest controls at every stage of lawn care.

### SEEDING A LAWN

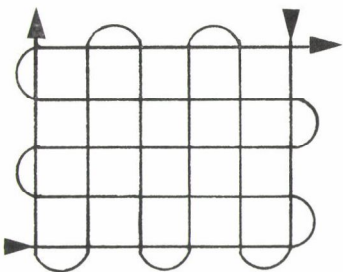
#### Choosing Seeds

A lawn isn't covered with just one type of grass: a variety of plants make a lawn adaptable to different conditions. Pre-packaged seed mixes are readily available in garden centres: there are seeds for open, sunny yards, shady lawns, and areas that need to withstand a lot of traffic. Read the label to determine the content of weed seeds. Buying discount seed, old seed, or seed with a high weed content may ultimately be more expensive.

Take time to prepare the ground before seeding. This can help reduce the risk of disease as well as of drainage and

fertilization problems once the lawn has started to grow. Remove large rocks and wood debris; rotting wood can promote fungal diseases. You need 2 to 7 cm of good, even soil to seed.

To find out more about the type of soil on your land, learn to recognize weeds and have a soil test done in a garden centre. This is the best time to improve the soil by adding organic matter and black earth, if the soil is sandy, or organic matter and sand if the soil is compacted. Add lime if needed, and a phosphate-rich fertilizer like bonemeal. Work it into 10 to 15 cm (4 to 6 in) of soil using a rototiller. Take the time to level the lawn to prevent mowing problems, and install a drainage system, if necessary. You are now ready to seed the lawn.



Sowing seeds



If you are seeding by hand, broadcast half the seed walking lengthwise across the site and the other half walking crosswise. This ensures that the whole area is evenly covered. Don't use old seed that might not germinate. Keep a seed density of 1 to 2.5 kg/100 m<sup>2</sup>; don't skimp on seed. Bury the seed no deeper than 1.25 cm.

If you don't have garden roller, just walk on the seed. A light mulch of peat moss or straw will hold moisture in and reduce the redistribution of seeds. Keep the soil moist by watering lightly once or even twice a day for 3 to 5 weeks, until the grass is growing well. Don't walk on a new lawn. Mow the grass for the first time when it is 7 cm long.

Don't worry about weeds; they should disap-

---

## LAWN CARE

### SPRING

### SUMMER

### FALL

#### **Seeding :**

Possible but the best time to seed is in the fall. Seed again if the lawn doesn't come up well.

Do not seed in the summer, since the delicate new blades cannot resist sun, heat and dryness.

Recommended from mid-August to mid-September, when the warm soil speeds up germination.

Sod can be laid any time. After laying the sod, roll the lawn to get the sod's roots to deep into the soil as quickly as possible. Water the new sod thoroughly and don't walk on it when it is wet.

#### **Watering :**

Ground is well saturated and additional water is not needed. A lawn kept 7 cm long does not need to be watered until late June, unless there hasn't been a good rain every 7 to 10 days.

When the grass takes on a blueish tint and shows footprints after you have walked on it, the grass is starting to wilt. The grass go dormant : don't water and it will become green again in the fall season.

Fall watering isn't recommended, except if there is little rain.

If you want to keep it growing : water it for 2 to 4 hours to provide 2.5 to 5 cm of water.

During dry spells, water regularly if possible. Avoid watering in the afternoon or when it is windy, because too much water is lost through evaporation.

Sprinkling for only 15 minutes creates a lawn with shallow roots. Because the roots cannot reach the water table, there is a greater risk of drought injury.

A sandy soil needs to be watered twice a week.

---

---

## SPRING

## SUMMER

## FALL

### **Mowing :**

The first cut must be short: 3.5 cm. Gradually increase the cutting height to 7.5 cm. If your lawn is weak because of hard winter, keep it longer: 7 to 10 cm.

Grass grow more quickly in spring and must be mowed more frequently.

In midsummer, the lawn should be kept about 6 to 7.5 cm.

Cut the grass less often during hot periods.

In the hot days of summer, there is no need to cut it shorter: 7.5 cm.

Keep the grass long until the growth rate slows down as the weather begins to cool.

Start cutting the grass gradually shorter, from 7 to 3.5 cm until the grass stops growing entirely.

Grass grow more quickly and must be mowed more frequently.

### **Fertilization :**

A little nitrogen fertilizer is necessary (0.5 kg/100 m<sup>2</sup>).

Do not fertilize in midsummer, because weeds benefit greatly from the nutrients and there is much greater chance of fertilizer injury.

Have a soil test done at your garden centre. Aerate the soil before fertilizing and water afterwards.

Apply nitrogen fertilizer (mid-August to mid-September).

Fall liming will give the best results, but never lime on newly seeded lawn.

In september, the use of fertilizer rich in potassium and phosphorous but low in nitrogen promotes the growth of roots more resistant to the cold.

Fertilize you soil at least twice a year with a maximum of 0.5 to 0.75 kg nitrogen/100 m<sup>2</sup> each time.

---

---

**SPRING**

**SUMMER**

**FALL**

---

***Thatch :***

If you find that a barrier about 1 to 2 cm thick of matted plant material prevents you from touching the soil, you have thatch.

Keep the pH balanced, because acid soil slows the rate of decomposition of thatch.

Aerate your lawn with an aerating machine.

Rake leaves, dethatch and aerate again.

Grass clippings should be removed when the grass is treated with fertilizers, when it is wet or if the lawn has not been dethatched in fall.

---

pear more with each mowing, and with regular hand weeding you should get the better of them. You can seed again next spring or fall if the lawn doesn't come up well. Hang aluminum plates to frighten birds so they don't eat the seeds.

### Laying Sod

Laying sod is much more expensive than seeding, but the lawn is fairly well established in 2 to 3 weeks. Sod can be laid any time. It also has the advantage of not washing off slopes when it rains. Sod also smothers many potential weeds. Prepare soil for sod the same way you would prepare it for seeding. A rich, moist planting bed will attract the roots downward much faster. After laying the sod, roll the lawn to get the sod's roots to deep into the soil as quickly as possible. Water the new sod thoroughly and don't walk on it when it is wet. Don't cut your new lawn until the grass is 7 to 10 cm long.

## MAINTENANCE

### Mowing

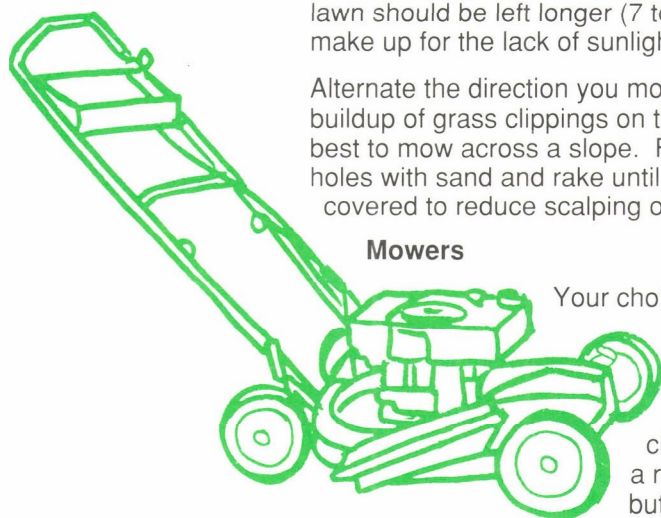
The best length for a lawn is 6 to 7.5 cm. You can determine the height of the blades of your mower by placing the mower on the sidewalk and measuring the distance between the blades and the ground. If you cut your lawn too short (3.5 cm), you increase its susceptibility to disease, insects and drought, so it needs more upkeep. If the grass is very long, cut it once, no more than 2.5 cm and then, to avoid weakening the grass, wait a few days before cutting again.

The best time to mow is when the lawn is dry, in the evening or on a cloudy day. A shaded lawn should be left longer (7 to 8.5 cm) to make up for the lack of sunlight.

Alternate the direction you mow to reduce the buildup of grass clippings on the lawn. It is best to mow across a slope. Fill in small holes with sand and rake until the holes are covered to reduce scalping on mounds.

### Mowers

Your choice of mower depends on your needs. A reel mower gives a much cleaner cut than a rotary mower, but a **rotary**



Rotary mower

**mower** is better for tall or uneven grass. A reel mower is usually used for small lawns with fine grass. Always keep blades sharp to avoid ripping grass instead of cutting it. Keep the underside of the mower clean. To avoid injuring the grass, don't add gas or oil while the mower is on the lawn.

### WATERING

There is no magic formula for watering, because wind, heat, evaporation, shade, length of the grass and type of soil all affect your lawn's needs. A lawn cut too short also needs more water to compensate for the loss of leaf surface, and wet soil may encourage weeds like crabgrass and the growth of fungus. If you have a short lawn, water it in the morning and let it dry out during the day. A healthy, deep-rooted lawn with long grass can be watered at night, because it doesn't need much water.

A fine spray is better than a heavy spray that might run over the surface before penetrating soil. The best way to test your sprinkler's water distribution is to set up empty cans at various spots around the lawn. Then you can move the sprinkler as needed to ensure that the whole lawn is well watered.

To find out whether the water is running off, push a **spade** into the lawn and see how **deep** the water has penetrated. The ideal depth is 10 to 15 cm. If water runs off, spray lightly with soapy water before each watering to help the water penetrate the soil and to discourage insects. Don't walk on a wet lawn. Shady areas need less water, but areas right under trees need twice as much. Fall watering isn't recommended, except if there is little rain, because the lawn should be healthy and green so it will live through the winter.

### FERTILIZATION

In fall, have a complete soil test done at your nearest garden centre or a professional lab.

The three numbers on a fertilizer bag, e.g., 34-0-0, represent the three major plant nutrients: nitrogen (N), phosphorous (P) and potassium (K). Nitrogen promotes the growth of the blades and keeps the lawn green. Phosphorous encourages root growth and potassium, also called potash, improves the hardiness of plant tissue and protects against cold and insects. Organic fertilizers have the same nutrients and are just as good, if not better.

## Aerate your lawn

If your soil is acid (pH less than 6) and you need lime, use dolomitic limestone if it is available. Apply lime with a fertilizer spreader. Early spring or fall liming will give the best results, but never lime a newly seeded lawn. If your soil is going to need a lot of lime, it might be better to divide the application over two seasons. Don't use wood ash to alkalinize, because it may accumulate in the soil and eventually become toxic.

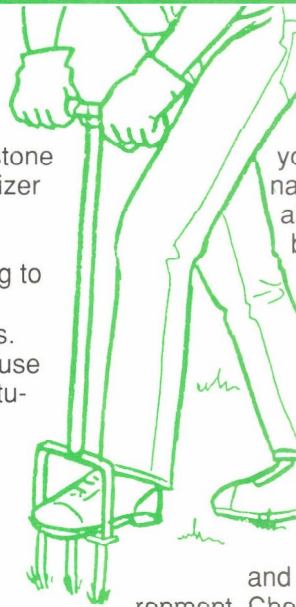
Generally speaking, a well-maintained lawn and good soil need 1 to 2 kg nitrogen per 100 m<sup>2</sup> per year. Grass clippings left on the lawn give back 1 kg/100 m<sup>2</sup>.

If you keep your lawn well mowed and watered, and lime as needed, it may not need any more fertilizer. Soil low in nitrogen may need fertilizer to compensate for losses during mowing, however. You can use organic fertilizers to correct nitrogen deficiencies: dehydrated manure, fishmeal, seaweed, blood meal and bonemeal are easy to find.

Fertilize your soil at least twice a year with a maximum of 0.5 to 0.75 kg nitrogen/100 m<sup>2</sup> (1 to 1.5 lb/1 000 sq ft) each time.

## THATCH

Thatch isn't formed by grass clippings left on the lawn. It is an interwoven mass of rhizomes, stems and dead but not decayed organic matter. If you find that a barrier about 1 to 2 cm thick of matted plant material prevents you from touching the soil, you have thatch.



To handle a thatch problem, you need to follow the maintenance procedures described above and keep the pH balanced, because acid soil slows the rate of decomposition of thatch. You also need to aerate your lawn in the fall. You can rent an aerating machine at the garden centre.

## CONCLUSION

A healthy green lawn improves the value of your house, as do flowers trees and shrubs. It is part of your environment. Chemicals aren't needed to prevent and cure lawn problems. Everyone benefits from the use of alternative methods. The choice is yours.

## SUGGESTED READING

Franklin, Stuart. 1988. Building a Healthy Lawn: A Safe and Natural Approach. A Garden Way Book. Pownal, VT: Storey Communications. 168 p.

Schultz, Warren. 1989. The Chemical-Free Lawn: The Newest Varieties and Techniques to Grow Lush, Hardy Grass. Emmaus, PA: Rodale Press. 194 p.

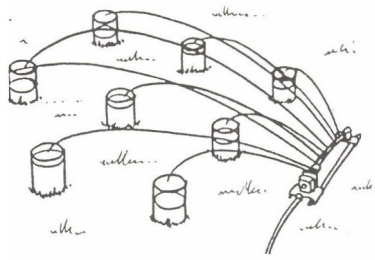
Collaborator : Sylvie Deslauriers, agronomist

## For more information, contact :

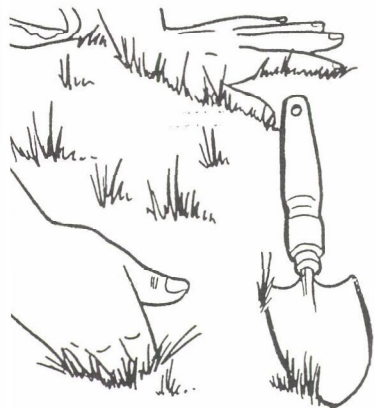
Environment Canada  
Communications Branch  
3, Buade Street  
Post Office Box 6060  
Québec City, Québec  
G1R 4V7  
(418) 648-7204  
1-800-463-4311

Published by Authority of the Minister  
of the Environment

© Minister of Supply  
and Services Canada 1989  
Cat. No. En-40-206/4-1990-E  
ISBN 0-662-17679-0



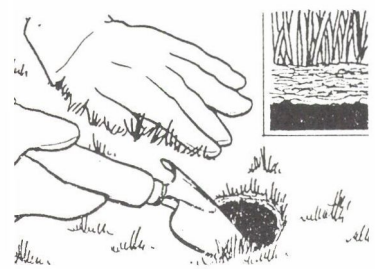
Test your sprinkler's water distribution



See how deep water has penetrated



Fertilizer spreader



Matted plant material that prevents you from touching the soil

Disponible en français

Think Recycling!



# Canada