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# Caring for your lawn with less cost to the environment

*This information paper has been produced as a guide to home lawn care by Enviromower. It will help to minimise your impact on the environment while assisting in the presentation of your garden. These recommendations are generally appropriate to South-eastern Australia.*

Grass areas are a significant element both within your garden and the environment. Your lawn, if properly managed can provide an "environmental service". Lawns can contribute to soil stability, water filtering, dust suppression, cooling, lessening the effect thermal and reflective radiation on buildings. They also are important in nutrient retention and organic recycling. Sadly, it is ironic that much of the benefit of this environmental service is diminished due to the environmental impact of mowing equipment.

In making a choice to use the Eco-500 cordless rechargeable lawn mower, you have already lessened your impact on the environment. As well as reducing the neighborhood noise, you have now eliminated the pollutants, fumes and odors emitted from your old petrol mower – and that's a change from which everyone benefits.

**Grass, lawn or turf – whatever you call it, it's a plant community willing and able to serve you and your environment!**

There are scores of different species and varieties of grass, too numerous to consider one-by-one here. There are however some general characteristics of grasses that "do the work" for you and make a successful and sustainable lawn and garden. Species and varieties of turf may be perennial, short-lived annuals, tufting, tussock or mat forming. Some grasses are active in cooler months whilst others flourish through the summer. Many are compatible living together, others just don't like to mix. Some varieties even have been developed to grow slower, so you need to mow them less.

Simply put, you need to provide the resources the grass needs to function in your location. This may be less than you think!

The basic structure of grass species:

- The grass leaf or blade is where the plant converts solar energy into food to grow
- A system of over and underground stems or a crown used for food and water storage and as a sturdy support for the plant.
- A system of finer roots and root hairs which anchors the plant and absorbs water and dissolved nutrients from the soil.

**…….and some common reasons why they fail or perform poorly!**

- Plants do not get enough light, either because it is too shady, or the grass is mown too short so it does not have sufficient leaf area.
- Grass is mown too short which also reduces its root, stem and storage capacity. This causes weeds to flourish in the lawn which often out-compete the grasses.
- The soil has poor structure such as being too compacted or too weak and free-draining.
- The soil does not offer sufficient food resources for the grass.
- Too much food or water weakens, or causes the plant to grow in an "unbalanced" way.
- There is too much traffic causing wear-and-tear.
- The grass species used is not appropriate to the location or conditions (such as shade or exposure) have altered over time.
- Fungal, insect and/or animal damage can occur.

- The grass is afflicted by sheer age or is needing rejuvenation (see section on cultivation)

**A brief word on lawn design and layout**

A lawn area is often referred to as the gardens "green canvas" and is a useful design element as well as being a practical solution for using certain types of space. And of course, a lawn provides space to spread out, play a game or to view whatever there is to see.

It is important to emphasise that there are times when it is not appropriate, practical or necessary to install or maintain a lawn. Alternatives to grass such as paving, gravel, mulches or non-mowing ground cover plants in all or part of the garden are often a useful, sometimes necessary solution.

These are some simple points to consider in designing or laying out lawn areas around your home.

- Avoid attempting to establish grass under the heavy shade and competition of trees. Use alternative treatments such as ground covers or solid surfaces. Be aware of how the sunlight tracks across the yard and if possible, position lawn to get the appropriate level of sun.
- More generous, rounded or squarer areas are generally more practical to maintain than longer narrow sections of lawn. Avoid narrow areas of grass in areas where traffic and wear is higher.
- In informal designs, consider using edges with gentle "sweeping" curves as these are easier to maintain than sharp curves.
- While a successful lawn never needs to be as flat and level as a bowling green, take care not to create extreme crests and dips.
- A lawn that is slightly elevated from your garden beds is less likely to accumulate leaves or debris, particularly at its margins.

**Tips on successful lawn maintenance through mowing, cultivation and rejuvenation**

**An important word on mowing heights**

When grass is mown too short, the lawn will perform poorly, especially during times of summer moisture stress. It is not possible in theory or practice to turn your grass into a golf green by simply choosing to mow it shorter. By mowing too short, the leaf blade area is reduced, and correspondingly, all roots and stems are also reduced.

**Unless you have a specific turf species suited to close mowing, your regular mowing height should not be less than 50mm (about 2 inches). A height of 50mm is preferable. It is also a useful rule to never remove by cutting more than one third of the total length of the leaf in any one mowing session.**

Keeping the mower blades sharp both means more efficient mowing and less damage to the grass.

By applying these simple rules, you will grow a happier lawn. A longer, larger leaf-blade will help shade and cool both the grass plant and root system and soil. There will also be an increase in total root and storage capacity of your grass making it more hardy to dry and wetter conditions. And, because they're is greater shading of the soil surface, there will be less tendency for unsightly and competitive weeds to establish.

**Should I mow a wet lawn?**

It is always preferable to mow grass when it is dry because:

- The mowing machinery will work more efficiently
- Less tearing of grass blades will occur
- You are less likely to spread turf diseases
- There will be less 'green staining" to the machinery, paved areas and you!

**To catch or not to catch the grass clippings?**
There are no absolute rights or wrongs about removal of grass clippings when mowing. Provided that the cut grass is dry and evenly spread about the lawn, they will quickly dry and decompose to return as nutrients to the soil. Use your discretion. Certainly, remove the clippings if the grass laying on the surface is preventing sunlight reaching the lawn.

Remember, if you constantly remove clippings from the lawn, you will need to feed it more.

Consider fitting the Eco – 500's mulching mower-blade to more thoroughly process this valuable source of organic matter for the good of the soil.

**What other cultivation does your lawn require?**
From time to time, your lawn will benefit from a little extra treatment to keep it strong and hardy. These are some general things you can do to improve and maintain your lawn:

***Fertilising and pH***
Fertilisers can be either friend or foe. At worst, it is possible to apply too much which is more likely to tax the lawn. It will also be negative to the environment if excess nutrients run off into our catchment and waterways. It is preferable to fertilise a little and more often rather than in larger single doses. A formulated, balanced **slow-release** lawn food is ideal. Avoid fertilisers high in nitrogen unless you are treating a soil deficiency. Both organic and synthetic lawn foods are commercially available.

pH is a measurement describing levels of soil acidity or alkalinity. Whilst the total chemical processes within the soil are complex, simple soil analysis is possible. The correction of the soils pH can provide benefits to the lawn, particularly by ensuring that a balanced range and quantity of nutrients are available to the plants. Whilst the preference for grass is generally slightly acid (6.5) the range over which grasses function adequately is fairly wide, from pH 5.5 to 7.5. There are ways to adjust soil pH such as the use of lime and acidifying substances. Seek the advice of a professional to assist you.

Key tips:
- Only apply fertilisers on a lawn when the soil is damp (after rain is ideal)
- Water fertilisers in deeply and evenly.
- Never use more than the recommended application rates. Consider halving the application rate as domestic lawn seldom requires the recommended application rates.
- A maximum of two applications per year (spring and early autumn) is often adequate.
- Consider improving soil structure so plants can use nutrients more effectively. (see following sections)

***Removing excessive stem or thatch***
Over time, in some lawns, old organic material can build-up within the lawn. In extreme cases this material (called thatch), will result in less water penetration and reduce the physical space in which the grass can grow.

Low levels of thatch can be removed by first close mowing the lawn (one of the few times you would choose to lower your mower,) and teasing out and removal of the material with a stiff rake. For heavy thatch, a vertical scarifying machine may need to be hired or call in a contractor for the task. The machine will remove the thatch and also prune and divide the grass stems. This will rejuvenate them – much like pruning a shrub. Removal of thatch is best done in early spring or autumn. Light feeding and top-dressing with the appropriate soil (see below) can be done to coincide with thatch removal to give best results.

***Aeration***
Oxygen in the soil is essential for plant growth. When oxygen is depleted due to soil compaction or thatch, plant roots simply can not grow into the soil to get water and nutrients.

Aeration encourages a deeper and more extensive root system assisting in hardiness and drought tolerance.

**Key tips**

*Aeration can be achieved by:*

- Resting the ground from traffic for periods of time if compaction is slight.
- Aerating with a hand operated lawn coring fork or hollow tine which removes a long "plug" of soil and roots.
- Hiring in or arranging for a mechanical coring contractor to core the area.
- In extreme situations, the whole area may need re-digging or hoeing to incorporate soil improvements before re-sowing an appropriate grass.
- Avoid using the points of a fork to aerate the soil surface as this may increase compaction.

Once aerated, you may leave the area to recover or to be over-sown with seed and top-dressed with an appropriate soil to fill in the core holes. After aeration, it is an ideal time to feed and deep-water the lawn.

As in thatch removal, aeration is best done in spring or autumn.

**Top-dressing**

Top dressing is applying a soil or "medium" evenly over the surface of an existing lawn. The area is prepared for top-dressing by firstly mowing the grass very low and removing excessive thatch material.

*Top-dressing is used to:*

- Smooth the surface of the lawn (a smoother surface is safer, quicker and easier to mow)
- Provide a place in which newly sown lawn-seed can germinate
- Introduce soil to improve the texture, drainage or water holding capacity of the lawn.

Key tips:

- Generally, a sandy top-dressing soil is preferred.
- The soil should be free of weed seed.
- Incorporating soil-moisture retaining or wetting agents during top-dressing can be highly beneficial.
- New lawn seed can be sown first or mixed in the top-dressing soil.
- Apply the soil thinly and smooth or "smudge" the soil with the timber edge or hire a purpose-built tool through your nursery, tool-hire or garden suppliers.
- Keep the area moist while seed germinates and grass re-establishes.

**Tips on being "water wise"**

Water is essential to plant growth and increasingly a precious, costly and scarce resource. Domestic lawns rank as major users of water – but you can do some simple things to reduce your water-use.

Key tips:

- If watering is required, water thoroughly and deeply. Shallow, frequent watering will not "train" your grass to be hardy.
- It is preferable to water in the cool of early morning, well before the heat of the day. (think of it as a good drink before running the marathon – its less useful afterwards)
- If watering in the evening, see that it is cool and that the soil has also lost its warmth to lessen evaporation.
- Observe your lawns needs over periods of dry. Allow it to become quite dry before thoroughly watering again. A domestic lawn with a well developed root system should be able to cope for up to a week without water.
- Observe the weather. If it looks like rain is coming, wait that little extra time to see what happens. It may mean saving thousands of litres per year.
- The use of moisture saving agents (e.g. water absorbing crystals) can increase the water available to the lawn.

**Tips to reducing garden waste**

By choosing to use the mulch-mowing method or non-removal of clippings, you have already made a positive start to waste reduction.

Lawn clippings are a useful ingredient for composting. Mixed with other dry leaf litter, vegetable scraps or shredded paper, clippings will create life giving compost for your garden.

Do not use fresh lawn clippings as garden mulch. The clippings will both rob the soil of nutrients as they decompose and they can form a waterproof layer over the soil. Often the clippings will bring weed seeds into the garden. Avoid mounding clippings at the bases of trees or shrubs as the heat generated while it decomposes or the moisture building up can damage the plant.

A composting bin of about _ a cubic metre will generally be adequate to process all lawn and organic kitchen waste. Remember not to place your organic waste in the bin to go to the tip.

**Some environmental facts about the impact of domestic lawn-mowing**

- Two stroke motors are significantly more polluting than four stroke motors. For example, a two stroke motor emits greater than seven times the volume of Volatile Organic Compounds (VOC's) as compared to a four stroke. A 2 stroke emits about 14 times more atmospheric particles in comparison to a four stroke.

- In Victoria's Port Phillip Region, the length of time spent mowing domestic lawns is estimated to be 1.2 million hours annually. Currently, hand and electric mowing is used for only approximately 6% of total mowing time.

- Of total polluting emissions, petrol lawn mowing ranks second or similar to that of solid fuel combustion stoves.

- In all but inner city Melbourne of the Port Phillip region, the average time mowing hours per household is between 15 to over 30 hrs per year.

**References:**

Air Emissions Inventory. Environment Protection Authority Dec. 1998

Draft Air Quality Improvement Plan – Port Phillip Region Environment Protection Authority 2000

**Useful references about lawn care**

www.lawnmasterslawncaretips.com

www.scotts.com

Enviromower supports Greening Australia's work of restoring the environment.

Greening Australia Victoria Inc.