How to Get The Perfect Lawn

A concise guide to establishing and maintaining a perfect garden lawn

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plantadvice.co.uk

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About the Author

George Munford is a professionally trained and fully qualified horticulturist, who is the resident **Gardening Guru** at www.plantadvice.co.uk. Over the years George has worked at numerous prestigious establishments including the *Royal Botanic Gardens* at *Kew* and *Burghley House* Gardens in Lincolnshire.

George has led teams of Botanical Horticulturists and has in-depth experience of every aspect of gardening from producing new plants with a variety of propagation techniques to the maintenance and development of established gardens.

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Introduction

We all lead busy lives. Our gardens are a place to unwind from the rigours of modern life. On a hot summers day great comfort and peace can be found lying on the lawn in your garden in the semi-shade under a tree. The simplicity of a lawn and its colour offer therapeutic qualities. A lawn is also place to socialise, a place to play, a place to relax and a place to keep fit and enjoy sport.

For many gardeners the lawn is such an important part of their garden that they spend many hours caring for it and trying to improve it. The ultimate goal is often *The Perfect Lawn.*

A lawn can be both an aesthetic visual feature, and a practical surface for a range of activities. The presence of a lawn as the focal point of a garden softens any surrounding hard landscaping. Whilst a lawn is often the main feature of a garden, it is also the most labour intensive, requiring more maintenance and care than any other part of the garden. However, very few gardens do not have a lawn, maybe this is because they are attractive and maintain their colour all year round, even in the deepest depths of winter.

This book has been written with the aim of providing all the necessary information to achieve *The Perfect Lawn*. It is a free book for the loyal visitors to our website:

www.plantadvice.co.uk

The book provides information on maintaining and improving an existing lawn and making and establishing a new lawn. There is all you need to know about feeding, watering and controlling weeds and pests. In line with our policy at www.plantadvice.co.uk we would recommend, wherever possible, the use of environmentally friendly methods and organic products.

We hope you enjoy the book and if the quality and versatility of the grass in your garden is important to you, hopefully in a year or two you will have got a little closer to achieving your own *Perfect Lawn*.

The Lawn and the Underlying Soil

To understand the lawn and how it thrives you must first forget it! Forget about the lawn for a while and focus your thoughts on what is beneath it. The soil beneath your lawn is extremely important and has a massive influence on the health and appearance of your lawn. If you know little or nothing about soil science you will struggle to create or maintain *The Perfect Lawn.*

If your knowledge of soil science is limited or a bit rusty please read our article Soil Science Simplified and then come back to this book.

So now you have refreshed, or improved your knowledge of soil science. In summary, if we are to have *The Perfect Lawn,* the soil needs to have the following qualities:

- Needs to be fertile
- Ideally a sandy loam with good structure and texture
- Good, well structured subsoil allowing free drainage
- Holds on to water, but does not become waterlogged
- It has a suitable pH value
- Topsoil depth between 20 - 30cm allowing deep rooting
- Contains plenty of earthworms and other beneficial organisms

Creating a New Lawn

Types and Species of Grass for UK Lawns

Lawns in UK gardens usually consist of a mixture of some, or all of the following grass types:

- Bents (Agrostis)
- Fescues (Festuca)
- Meadow grasses (Poa)
- Perennial ryegrass (Lolium perenne)

Characteristics of Different Grass Types

Bents

The bents are low growing and most tolerant of low mowing.

Fescues

Fescues can also be cut low, they are hard wearing and some of them can tolerate poor soils.

Meadow Grasses

These are hard wearing and have coarse leaves.

Ryegrass

Ryegrasses are very hard wearing and tolerate most soil types. However, they should not be closely mown.

Annual Meadow Grass

Found in many lawns, but considered by many to be a weed because it forms coarse patches of grass.

Selecting Grass Species

When choosing turf, or buying grass seed, you need to find out about the types of grass in the turf, or the characteristics of the seed you are buying. Whether it is turf or seed, it will usually be a mixture of different species of grass, each with their own qualities.

Factors to Consider

- The final finish or appearance
- The main use for the lawn and how hard wearing it needs to be
- How often the lawn will be used
- What is the site like and the conditions? e.g. soil, light levels, drainage.

High Quality Lawns

If the aim is to create a perfect, ornamental lawn that will not be used excessively, the best grass varieties to use are **fine-leaved bents** and **fescues**, preferably a mixture of the two. High quality lawns usually require the most maintenance.

Multi-use Utility Lawns

If the primary use of the new lawn is for activities or children's play, then the grass species used need to be tough and hard wearing. Ideally they will also have an attractive appearance. For this type of lawn,

perennial ryegrass is usually mixed with **red fescue, smooth-stalked meadow grass** and **browntop** or **highland bent.** Multi-use lawns can be used frequently and require less maintenance, but they do have some minor imperfections.

Grass for Sport

If the purpose of a new lawn or grassed area is to play sport on, then the grass species used to create the surface need to be particularly tough and hard wearing. The different species used also need to be able to cope with being cut frequently and to a low level, this quality ensures that the run of the ball is not influenced by long grass. The primary constituent of grass seed mixtures for sports turf **is Perennial ryegrass.**

Grass Seed Species for Difficult Sites

For Wet and Shady Sites

- Wood meadow grass (Poa nemoralis)
- Rough stalked meadow grass (Poa trivialis)
- Fescue
- Turf Timothy (Phleum pratensis subsp. bertolonii)

For Very Dry Sites

- Western wheatgrass (Agropyron smithii)
- Fairway crested wheatgrass (Agropyron cristatum)

Preparing the Site for a New Lawn

The key to creating *The Perfect Lawn,* if you are creating a new one, is in the preparation. The hard work is done before the seed is sown or the turf is laid. The preparation is the same regardless of whether seed or turf is to be used. The ultimate aim when preparing the site is to create an environment in which the new lawn will grow vigorously so that it **overpowers** any weeds or moss.

Stage 1

Choose the site carefully, the soil can be manipulated and improved, but ideally the site will get plenty of sunshine and (for ease of lawn mowing), it will be on relatively level terrain.

Spend plenty of time removing any stones or rubble, dig out any weeds and the roots of any other plants that you find on the site. The perennial weeds are the most troublesome at this stage, the deep tap root of a **dandelion** or **dock** can easily reshoot if a piece of the root is left behind when you dig it up.

Stage 2

After removing stones and weeds from the site, dig over the whole site by hand, or on a large site use a rotavator. This process will bring more stones to the surface, remove these with a rake.

It is at this point, if the topsoil is a sandy or chalky type, that it needs to be improved to increase its moisture and nutrient holding capacity.

This can be done by adding plenty of well rotted garden compost or farmyard manure when digging over the whole site.

If the site that you are digging over for a new lawn has heavy soil and poor drainage, there are three options to improve it.

1. Adding loads of well rotted garden compost or manure will improve the drainage.
2. The addition of sand at the rate of 2 parts sand to 1 part soil will also improve the drainage of a heavy clay soil. You need to be careful with the application rate though; if the topsoil is too free draining with a high sand content then moisture and nutrients will quickly '*run off*' to the detriment of the grass health.
3. Alternatively, a drainage system with pipes buried under a layer of gravel will carry excess water away from the site.

Stage 3

Once the site has been dug over, the drainage, water holding and nutrient holding capacity of the soil improved, then you should leave the site to settle for a couple of weeks. When you return, the next job is to level the site and create a good, fine **tilth** for seed sowing or turf laying.

Firstly, firm the soil by treading, putting the weight on to your heals or use the back of a rake, but this can be tiring on the arms. Tread the site all over 3 or 4 times, so that the soil is sufficiently consolidated. This process should eradicate any undesirable bumps or hollows that might be scalped by a lawnmower after the lawn is established.

If you have the time, it pays to have another break now. These breaks not only give you a rest, they will also potentially reduce the number of weeds in your new lawn once it is established. The break will allow any weed seeds that are still in the soil to germinate. These seedlings can be hoed off or sprayed with a contact herbicide.

If you want a perfectly level lawn, then a grid of marked pegs can be used. The soil can be raked away from the marks or raised up to the marks to create a level surface between each peg. The pegs should be knocked into the ground to an equal height so that their marks are all at the same height above the soil level. A spirit level can be rested on the peg tops and the pegs adjusted for a perfectly level surface.

Finally, a week or so before you plan to sow grass seed or lay turf, add fertiliser to the soil. Use a powdered or small granular fertiliser that is balanced, containing the three major nutrients and rake it lightly into the soil.

Turfing

Creating a new lawn with turf gives an instant visual impact, although you will not be able to use the new lawn for about 6 weeks. Using turf is much more expensive than using grass seed.

When purchasing turf, make sure you do so from a reputable supplier who will make sure that their stock is weed free.

If your new lawn is to be created with turf, timing is important. Try to make sure that you use the turf soon after you bring it home or it is delivered. If this is not practical, and you need to store the turf, firstly unroll it and lay it on a sheet of plastic in a

semi-shaded site. Water regularly until you are ready to lay it. If you leave the turf rolled up for a prolonged period of time, it will not get enough light and will eventually die.

Keep an eye on the weather forecast and if possible, lay turf when rain is due a couple of days later. Turf can be laid at most times of the year apart from during very hot or very cold weather.

When you start to lay the turf, do so from the site edge inwards. Use different lengths of turf so that the ends of each turf do not form long lines, change the laying pattern from one row to the next; as a bricklayer would do with bricks, using a half length of turf at the start of every other row.

You must not walk on the new turf at all for the first few days and whilst laying it, therefore you need to work on a piece of board, or a couple of scaffolding planks are ideal. Plan ahead and work systematically.

As you work inwards from the margins of the new lawn, lightly rake each section of soil that you are about to lay turf on to. As you lay the turves, make sure they are snugly fitted up against each other.

Once you have finished laying all of the turf, you can cut and define the edges of the new lawn. If you want a curved edge, use a rope or hosepipe to create the shape and line of the new edge. If you require a straight edge, use a taught line and a plank with a reliably straight edge. Cut the new edge with a half-moon tool.

After a few weeks, when the turf has become established and the blades of grass are about 3 inches high (7cm) the new lawn is ready for it's first cut. Start with the lawnmower blades set quite high and then gradually lower each week. During the lawn's first year, use it as little as possible to give it the best possible start.

Grass Seeding

Using grass seed to make a new lawn is by far the cheapest method and you have complete control and choice over which grass species are to be used in the new lawn. However, you do not get instant results as with turf and you will need to have patience and wait for the lawn to become established. If you are making a new lawn using seed, realistically it will be 3 months before you can use it properly.

If grass seed is to be used to make a new lawn, the seeding is best done when the weather conditions are warm and moist. In the UK, mid-April to the end of May and September to mid-October are usually ideal times to germinate grass seed. The latter is probably preferable because the soil at this time of year is usually a bit warmer than the spring window. Even with reliable irrigation, summer grass seed sowing is not recommended because young grass seedlings may be killed by high summer temperatures.

Seed Sowing Rates

When sowing grass seed always follow the advice given on the manufacturer's packaging. Sowing seeds at a lower rate than recommended may allow weed seedlings in the soil more space to compete against grass seedlings. Where the rate of seed application is higher than that recommended, '**damping off**' can

result, especially in warm, humid weather. Damping off is the term used to describe a fungal attack on seedlings that causes them to die, usually from the roots upwards. Preventing damping off is the only method of control, and correct application rates when sowing grass seed will result in good ventilation between the grass seeds and therefore minimise the instances of damping off.

When sowing grass seed, calculate the area of the site to be seeded in square metres. For the most accurate application, use a grass-seeding machine. Measure half the volume of seed required for the site, spread this in one direction across the whole site. The remaining seed should be spread across the whole site at right angles to the first application. If you are sowing the seed by hand, divide the site up into small sections and seed each one individually.

When the seed sowing is complete, the seed should be lightly raked into the soil. If you are concerned that birds might feed on the seed you can cover it with some garden netting.

The time taken for grass seed to germinate depends on soil and air temperature, soil moisture and the species of grass seed used. On average, grass seeds will take 1 - 2 weeks to germinate in the right conditions.

If you have used seed, once the new lawn is established the grass cutting regime is the same as per a new lawn created with turf.

Irrigating a New Lawn

All that is left to do now both before the seed germinates and until the new lawn is established, is regular watering. This of course also applies if you have used turf. In really dry weather, the new lawn might need watering 2 - 3 times per day. If a new lawn is not watered properly, seed germination may be patchy or turves might shrink, leaving gaps between them.

Whatever the weather forecast, and depending on the size of the site, you will have to have some kind of irrigation provision in place even if it is just an outside tap and a watering can.

For an average sized lawn an oscillating lawn sprinkler can be attached to a hosepipe. For larger sites, a sprinkler hose can be used.

If you are out at work all day, or if you are will be going away on holiday before the new lawn has become established then you might want to leave the watering duties to modern technology; this highly sophisticated watering timer will do the job for you in conjunction with a sprinkler hose or oscillating lawn sprinkler.

Lawn Maintenance

Lawn Mowing

Grass plants can be repeatedly cut to a low level without damage because their growing points are right down at their base. Cutting a lawn regularly helps to create a dense sward that looks attractive.

The Lawnmower

In 1830, **Edwin Budding**, a textile engineer used his knowledge of the machinery that was used to cut the nap of cloth to invent the cylinder lawnmower.

Cylinder mowers have sharp blades that cut with a scissor action whilst the cylinder rotates. This type of lawnmower gives a much finer cut because the number of grass leaves cut, in comparison to a rotary mower is much higher. However, modern rotary mowers are much improved on the earlier examples.

Cylinder mowers for domestic use usually have 5 or 6 blades, the higher specification machines that professionals use often have up to 10 blades. A 6 bladed petrol driven machine will make about 80 cuts per metre.

Rotary mowers have a single centrally pivoted blade, they rely on the speed of the rotation of the blade to slash the grass at 2,500 – 4,000 rpm. To the trained eye, rotary mowers do not give the perfect finish that a cylinder mower does, but as the technology and quality improves the difference between the quality of the two finishes becomes smaller and smaller.

Cutting Times

The speed at which a lawn can be cut depends on the machine used and its cutting width as illustrated in the following table (Buczacki, 1990).

Width of Cut (cm)	m^2 Mown in 1 Hour
30	1,230
35	1,450
40	1,670
45	1,938
50	2,205

Table 1: Cutting times

Assuming a walking speed of 3mph (5kph) and 5cm overlap between cuts.

How Often Should you cut the Grass and at what Height?

The frequency at which you cut the lawn in your garden is influenced by many factors including:

- Species of grass and how vigorously they grow
- The air and soil temperatures
- The amount of moisture in the soil

It is best to cut a lawn frequently, taking small amounts of grass off each time. High quality lawns are usually cut very low and as frequently as every 2 - 3 days if they are actively growing strongly during the main growing season (April – September).

The grass varieties that are used to create a general purpose utility lawn will not tolerate being cut so low and should be left to grow longer between cuts. During the main growing season general purpose utility lawns should be cut to a height of approximately 2cm once per week.

However, as the main factors above indicate the frequency at which a lawn needs to be cut is highly dependent upon the weather. If the weather is warm and there is regular rainfall grass will grow vigorously and need cutting more often. When the weather is very dry, hot or cold the grass will not need to be cut at all.

It is best not to cut a lawn when it is wet, the grass cuttings will usually clog up under the lawnmower in such conditions. The lawnmower blades will also tear the grass blades rather than cut them cleanly which is not ideal and will give a poor finish.

Mowing Lawns Used for Ball Games and Sports

The run of the ball can be affected when grass is always cut in the same direction. Vary the lawn mowing regime each time you cut a lawn used for sports and ball games, cutting lengthways, then widthways.

Grass Cuttings

Removing grass cuttings when you mow, rather than leaving them to lay on the lawn, helps to prevent the build up of thatch (dead grass) on the soil surface which could potentially cause poor ventilation and create an environment that fungal diseases thrive in. A layer of thatch on the soil surface can also slow down or prevent rainfall from penetrating the soil.

However, when the weather is very hot and dry; cut grass left on the surface in such conditions can help reduce water loss from the turf and the soil surface.

The grass cuttings that you collect when you mow the lawn should be composted in thin layers in the compost heap, this will help them to rot down quickly. Thick layers of grass cuttings put into a compost heap tend to become very dry and rot very slowly or not at all.

If you have recently used a weed and feed treatment on the lawn, or just a lawn weed killer, then the clippings from the subsequent 3 or 4 grass cuts should not be composted. This is because the resulting compost may still contain traces of the weed killer, which may have the potential to damage the plants in the borders that it is applied to.

Choosing a Lawnmower

When choosing a new lawnmower, calculate the area of your lawn that you will regularly be cutting and select a mower with a suitable blade width using the following table (Buczacki, 1990).

Area of Lawn (m^2)	Recommended Mower Width (cm)
Under 100	30
100 - 200	35
200 - 400	40 - 45
Over 400	50

Table 2: Recommended blade widths

Lawn Feeding

A healthy lawn is a well fed lawn. Most soils contain all the essential nutrients for healthy lawn growth, fertilisers are used to supplement the soil nutrients, to give optimum growth and lawn health.

Feeding your lawn regularly will keep it healthy and help it compete vigorously against moss and weeds. Feeding should be done twice per year, at most 3 times. The amount you need to feed your lawn will depend on the soil it grows on. Sandy, free draining soils do not hold on to nutrients well and will need feeding more regularly, heavy clay soils are rich in nutrients and may not require much feeding. As discussed in the chapter about creating a new lawn, you can influence the amount of feed you have to give to a new lawn in subsequent years by adding plenty of manure or organic matter at the site preparation stage.

Grass needs different nutrients at different times of year, lawn fertilisers usually contain Nitrogen (N), Phosphorus (P), Potassium (K) and Iron (Fe). The non-organic products on the market for use in spring, summer and autumn consist of a feed and weed killer and/or moss treatment. Some products contain all three. When using lawn fertilisers always carefully follow the instructions and advice on the manufacturer's packaging.

Any fertiliser that you buy for garden use will always have an NPK analysis on the packaging. For help on understanding the amounts/ratios of nutrients in a fertiliser, we have an informative post on our website explaining what NPK means and how you can make specific use of it.

Spring / Summer Lawn Fertilisers

Spring and summer lawn fertilisers have a high concentration of Nitrogen. Nitrogen is needed to encourage strong, lush foliage growth. Grass growing in soil that is deficient in Nitrogen looks hungry, it is often pale green or yellowing. Lawn fertilisers for spring and summer use should not be used after the end of August because the resulting lush young growth can be damaged by cold winter weather.

Autumn Lawn Fertilisers

Autumn lawn fertilisers have a nutrient ratio high in Potassium which encourages the growth of harder, more resilient leaf tissues for the winter period. Nitrogen concentrations in autumn lawn fertilisers are lower because the resulting soft lush growth that a Nitrogen rich fertiliser would produce at this time of year would be susceptible to fungal attack. They also have a higher Phosphorus content, the nutrient that promotes strong, healthy root growth in preparation for the start of the next growing season the following spring.

Regardless of the time of year, if possible always choose a lawn fertiliser that contains both slow and fast release granules so that the lawn greens up quickly and remains so for many weeks.

Applying Lawn Fertilisers

Accurate application of lawn fertilisers is vital for the best results. Applying too much fertiliser can lead to excessive growth, or if you are using a non-organic chemical based product, an overdosed section of lawn could be killed. The rate of application needs to be precise and time needs to be taken to get it right. Lawn feeding can be done by hand, but to achieve the most even application use a push-along wheeled fertiliser spreader.

Such a machine will allow good, uniform application of the fertiliser and can be easily calibrated when using different products. These push along machines are pushed up and down the lawn systematically, row by row as if using a lawnmower. The wheel tracks from the previous row are used as a guide to avoid overlapping and overdosing.

For most lawn fertilisers the application rate is usually about 35g per m^2. On most machines used, the rate at which you apply the fertiliser can be manually adjusted or calibrated. Fertiliser packaging will state how much fertiliser should be applied in grams per square metre (g per m^2). The instruction manual that comes with the machine will tell you which setting to use to apply the fertiliser at the given rate.

Whatever machine you use, it is best to divide fertiliser required for the area into two. Spread the first amount in one direction and then spread the second amount at right angles to the first.

The other type of fertiliser spreader commonly used is the broadcast or spinning disk type. These can be pushed along by hand or are often attached to the back of a ride-on mower.

When you have finished fertilising the lawn, thoroughly wash the equipment used because non-organic lawn fertilisers contain corrosive chemicals which can damage metal parts of the equipment.

Organic Feeding of Lawns

Feeding a lawn organically has lots of benefits, it gives you peace of mind to know you are not using potentially harmful chemicals just to make your lawn look healthier and greener. Earthworms and other beneficial soil organisms are much more likely to thrive and reproduce in a lawn that is fed and maintained organically.

Organic Gardening Expert viewpoint

The highly respected Organic Gardener, Bob Flowerdew, offered his advice on lawn care (BBC Radio 4 Gardeners' Question Time), saying:

"The answer to controlling moss and weeds in a lawn, without using chemicals, is to make the conditions favourable for the grass and less so for the weeds and moss. First, stop using moss killers or herbicides, as both can kill worms, and fewer worms means poorer drainage and aeration and even more problems. Do all the conventional jobs such as scarifying and then over sow with strong-growing grasses, which like lime and do not like acid conditions. Now spread lime at a handful per square metre each and every winter. In spring, feed the soil to feed the grass, not with quick acting soluble fertilizers but with gentler organic

ones. Raise the height of cut of your mower, but cut just as often. Soon the lush grass will choke out the moss and weeds."

Aerating the Lawn

Lawn aeration is an umbrella term used to describe the methods that can be used to maintain and improve the health of grass plants in the root zone area and soil surface. This can involve removing thatch and moss, improving drainage and relieving soil compaction in the first few centimetres of topsoil. Lawn aeration will encourage grass plants to root more deeply, giving them access to more water and soil nutrients.

What is Thatch?

Thatch is the dead or decaying grass tissue that builds up on the soil surface of a lawn. It consists of decaying grass blades, rhizomes and stolons.

Why is Excessive Thatch not Good for a Lawn?

Too much thatch on the soil surface of a lawn can act as a barrier to water penetrating the soil. If the thatch becomes saturated, it can result in poor drainage from the turf and humid conditions that are ideal for lawn fungal diseases. Removing excessive thatch creates a good environment for healthy, fresh grass growth.

When to Aerate

Autumn is usually the best time of year to aerate a lawn because the soil is still warm from the summer and it is also usually moist because of autumn rainfall. These conditions help the lawn to recover more quickly after the treatment. After the

aeration, try to avoid using the lawn for a week or two to allow it to recover.

Scarification

Scarifying a lawn involves raking the turf to remove thatch and moss from the surface. Scarification improves growing conditions on the surface of the lawn and improves airflow which is vital for the living organisms that naturally break down dead or dying grass on the soil surface. A spring-tined rake can be used on small lawns but on larger lawns this will be tiring and impractical and a push-a-long rotary lawn scarifier may be a worthwhile investment, or even an electric lawn rake. If you are raking moss out of a lawn, it should not be done until you have applied a moss killer. This is because the raking may make the problem worse by spreading the moss spores around. However if you have an organic lawn management regime this will not be practical.

To scarify the lawn thoroughly, the process should be carried out in two directions, the second at 90^{o} to the first.

Hollow Tining

This process of aeration removes plugs of soil, grass and thatch from the surface of the turf. The purpose is to aerate the soil and ease soil compaction. Depending on the equipment you use, the holes created are usually about 10cm apart. On lawns that are poorly drained, the holes created can be backfilled with a topdressing mixture of lawn sand and good quality topsoil to

improve the drainage of the first few centimetres of soil. If you carry out this procedure once per year, it will improve drainage and airflow in the root zone, encouraging strong, healthy root growth.

Spiking

Spiking is similar to hollow tining, but it does not remove plugs of soil and turf. A mechanical aerator or hand spiker is used to make holes in the turf, supposedly allowing more air into the soil and relieving soil compaction. However, this method of aerating a lawn is not as effective as hollow tine aeration. When you stick a spike into the soil and create a hole (without removing any soil) the soil has to go somewhere, either downwards or sideways, which can only result in increased soil compaction.

Top Dressing

Applying a top dressing to a lawn surface helps to keep it aerated and reduce build up of thatch. As mentioned above it can also be used to fill the holes created by hollow tining. An ideal top dressing mixture consists of 2 parts lawn sand to 1 part topsoil. For standard top dressing, use 1kg per m^2. If the lawn has been hollow tined you will need a larger quantity to fill the holes so use 3kg per m^2. A broom is sufficient for distributing the top dressing evenly over the surface of the lawn.

Collecting Leaves from the Lawn

During the autumn it is best to clear up fallen leaves from the lawn. If you do not remove fallen leaves, they can prevent light and air from getting to the surface of the lawn. This can result in fungal diseases attacking the turf and in extreme cases the grass can be killed.

If you have large areas of lawn covered with leaves, you can buy specialist leaf blowers / vacuums to help you clear them up, alternatively, small amounts of leaves can be vacuumed up using a lawnmower with the blade set high.

Irrigating an Established Lawn

The grass in established lawns is usually incredibly resilient and usually recovers well from a period of drought. In long periods of drought, a lawn will change in colour from green to brown. You don't have to irrigate an established lawn during long periods of drought, in fact you might be prevented from doing so by a hosepipe ban. However high quality lawns contain grass species that are not so resilient to drought.

To avoid excessive evaporation of water from the surface of the turf, it is best to water lawns first thing in the morning or during the evening. Watering for short periods of time is a pointless exercise, it is better not to water so often but for longer periods of time so that at least 10cm of topsoil gets wet. Frequent watering that only penetrates the first few centimetres of topsoil encourages the grass to only set shallow roots, which results in the lawn being less tolerant of drought.

To find out how long you should water for, dig out a section of turf and topsoil so that you make a viewing hole in which you can see how far the irrigation has penetrated into the topsoil. Note how long it takes to irrigate the lawn so that the moisture penetrates to the required depth in the viewing hole.

Lawn Diseases

Fairy Rings

There are generally 3 types of Fairy rings that cause damage or look unsightly on lawns.

Type 1

This type of fairy ring just produces toadstools, there is no grass discolouration. With this type, no action is required. You can brush the toadstools off with a broom if you like.

Type 2

This type has a darker green colour on the outer edge of the ring. It is difficult to resolve and the best thing to do is to feed the lawn regularly to hide the discolouration.

Type 3

This type of fairy ring has two dark green rings with a mossy or balding area between them. The cause is the fungus **Marasmius oreades.** The growth of this fungus causes the grass to become susceptible to drought because it repels water. To eradicate this type of fairy ring, the topsoil in the affected area should be dug out to a depth of 30cm, 30cm either side of the ring. Remove the soil and turf from the site and replace with new topsoil and grass seed.

Other Toadstools on Lawns

If toadstools grow on the lawn, but do not form a ring shape then they are probably feeding on dead or dying plant material under the turf e.g. tree roots. If this is the case, you will need to lift the turf carefully to investigate what the toadstools are feeding on and if possible remove the food source. Once the food source is removed, some fresh topsoil might need to be added to raise the soil back up to its original height. You can then replace the turf.

If this seems like too much work, or is impractical, then the toadstools can just be brushed off as they appear, however this does not remove the underlying problem so the toadstools will reappear later. If you are just going to brush off the toadstools, do so as soon as possible before they have a chance to mature and release spores that will add to the problem.

Dollar Spot

Some lawns are more susceptible to this fungal disease than others, depending on the grass species that are in the lawn (creeping fescues and fine-leaved bents are more susceptible). Unfortunately, as with many other lawn problems the visual symptoms between one problem and another are similar. The symptoms of Dollar Spot are brown, straw-like patches; similar to drought. The patches are usually seen in early autumn, they are small at first then start to merge with each other. Dollar spot patches change colour, becoming darker as they mature. Dollar spot is caused

by the fungus **Sclerotina homeocarpa**, which thrives on poorly drained lawns that grow on heavy soils. Hollow tining and scarification will reduce the risk of this disease occurring. A lawn fungicidal treatment can also be used in severe cases.

Fusarium Patch/Snow Mould

This disease causes patches of lawn to turn yellow and die. As the patches grow, they merge and join together. During periods of damp weather, blades of grass stick together and a white, fungal growth is visible. The fungal disease that causes these symptoms is called **Monographella nivalis.** It is a disease that is often encouraged by poor lawn maintenance and excessive use of lawn fertiliser products that have a high Nitrogen content at the wrong time of year, usually late summer when an autumn feed with a weaker Nitrogen content would be more appropriate.

Regular hollow-tine aeration, scarification and careful timing of the application of summer use lawn fertilisers will reduce the instances of Fusarium patch/snow mould.

Red Thread

This is a disease that affects the finer grass species e.g. Fescue. Tiny patches of pinkish red appear in the lawn, which are caused by the fungal disease **Laetisaria fuciformis.** These patches spoil the appearance of the lawn and the areas affected are weakened. Red Thread patches are most likely to be found on lawns that are lacking Nitrogen and also where drainage is poor after wet weather. Once again, good maintenance is the key to avoiding this lawn disease. Scarify, hollow-tine and feed the lawn twice per year.

Lawn Pests

Ants

Heaps of soil are brought up to the lawn surface by ants mainly during the summer months. They do this as they dig out their underground nests. The soil heaps can be brushed away with a broom. Organic nematode treatments can be used that do not kill the ants, but encourage them to move away from the lawn to make new homes elsewhere. This is because they do not like to have the nematodes in their habitat.

There are also non-organic dusts and sprays that are available to chemically attack ant nests. If you want to use these, the nest should be disturbed first with a garden fork. Pouring boiling water into a disturbed ants nest is also a common way to kill ants, but several attempts will be necessary. Clay pots upturned over an ants nest during the summer months will soak up the warmth of the sun and encourage the ants to bring their eggs and cocoons up to it. The pot can then be taken away and the ants given somewhere else to live away from your lawn.

Leather Jackets

Patches of lawn may turn brown and maggots may be visible. The maggots are the larvae of daddy-long –legs and they feed on the grass roots. The larvae are grey, legless and about 3.5cm in length. One way to remove leatherjackets from your lawn is to cover the affected area with black polythene. This brings the leatherjackets to the soil surface, they can then be picked off and destroyed. Pathogenic nematodes can also be introduced

into the soil when it is warm enough during the summer months. The nematodes will feed on the leatherjackets.

Chafer Grubs

The first sign of this lawn pest is often when other animals damage the lawn looking for them to eat. Chafer larvae are usually found in lawns that have sandy soil beneath. There are different species of Chafer beetles that produce the larvae. The larvae are white with brown heads and three pairs of legs. Chafer grubs are less common on healthy lawns so regular feeding and maintenance help, plus watering when necessary. Organic nematode treatments can also be used to kill Chafer grubs, or a specialist chemical insecticide.

Moles

One of the most visually obvious lawn pests, moles are most common on high quality soils where there is a large earthworm population. Moles leave the familiar piles of soil all over the lawn as they dig their underground tunnels. Sometimes their tunnels cave in, leaving the lawn surface uneven. In England, it is still legal to kill moles, but in some European countries it is illegal to do so.

Sonic mole repellers are the most common method used today to control these pests. They are usually battery operated, but some solar powered models are available, and will repel moles up to a radius of 15 metres.

Mole traps require more skill to set up successfully, moles are very clever and a person experienced in setting mole traps is much more likely to successfully catch a mole. The repellers are also a more humane way to discourage moles from damaging your lawn.

Dogs and Cats

Brown scorched patches that appear on lawns can be caused by dog or cat urine. If the appearance of your lawn is important, you own a dog or cat, or you know that one has access to your garden then you need to prevent the pet from using your lawn as a toilet if at all possible. Alternatively, try to restrict the area of lawn that the dog or cat is allowed to use to a low profile area. If you see a dog or cat urinating on your lawn, go out with a bucket of water and soak the affected area. This dilutes the urine and reduces the damage caused. It is more likely though that you notice the damage caused long after the event, in which case the only remedy is to remove the damaged section of turf and replace it with fresh turf or re-seed.

Worm Casts

Worms and the casts they produce should not really be regarded as a problem for those trying to achieve the perfect lawn. Worms help to create and maintain an excellent soil structure and also aerate the soil. They also help to carry organic matter from the topsoil downwards. In fact worms are so

beneficial to the health of a lawn that any cosmetic damage that they do in the form of casts left on the lawn surface should be tolerated. If the worm casts bother you, brush them off regularly with a broom.

Lawn Weeds

Weeds in a lawn can be controlled with the weed killer in a lawn weed and feed treatment, organically by hand, or by selective weed killer purchased in liquid ready-mixed, liquid concentrate or powder form.

Most modern lawn weed and feed treatments contain more than one chemical to treat weeds. **2, 4 – D** is commonly used to treat broadleaved weeds e.g. Plantain. **Mecoprop-P** is used to treat weeds that have small leaves and creeping types e.g. common white clover.


Self-heal

If you don't want to feed the lawn at the same time as dealing with the weeds, selective lawn weed killers are available that can be sprayed on to the foliage of the weeds and they will be killed in a few days after the chemical has worked it's way down to the roots. These selective weed killers are specially formulated to control common lawn weeds and will help to control the deeper tap rooted weeds such as **Dandelion**. Regular applications may be necessary.

The most persistent lawn weeds can continue to thrive in the turf below the blades of the lawnmower. Some weeds have shallow roots so they can be removed using a hand fork or trowel. Weeds that creep along the surface of the lawn such as **Speedwell** can have their growth checked by raking the lawn

before mowing. This brings the creeping stems up above the lawnmower blade height and they get chopped off.


Common white clover

Weed killers should be applied during the main growing season, (April - September). They should be used in addition to keeping the lawn well nourished; a well fed lawn will compete vigorously against weeds and should reduce the need to use weed killers. Lawn weed killers should not be used until 3 to 4 days after mowing, this allows weeds that have been damaged by the lawnmower to develop new, fresh, full foliage with the optimum surface area available to soak up the weed killer. Once applied, the weed killer needs to work its way down through the plant to the roots so avoid cutting the grass for 2 - 3 days after application.


Creeping buttercup

Many lawn weeds will need multiple applications of weed killer before you finally eradicate them. Some weeds may not be controlled at all by chemical attack, some people argue that Health and Safety legislation has led to the strongest, most effective weed killers being banned and that modern weed killers are not as strong. If you cannot kill a weed by using a weed killer it may just have to be removed by hand, or be patient and persist with

maintaining the health of the grass which will eventually choke out weeds.

Other Common Lawn Weeds

- Slender speedwell (Veronica filiformis)
- Common white clover (Trifolium repens)
- Sheep's sorrel (Rumex acetosella)
- Creeping buttercup (Ranunculus repens)
- Self-heal (Prunella vulgaris)
- Broadleaved plantain (Plantago major)
- Common mouse-ear chickweed (Cerastium fontanum)

Moss

Moss is one of the most common weeds to be found in lawns. Moss thrives in lawns that are unhealthy and not growing vigorously enough to compete against it.

What Causes Moss to Grow?

Cutting Grass Too Low

Mow lawns regularly but not too low, during the main growing season (April - September) a general purpose lawn should be cut to a height of approx. 3cm. A high quality lawn e.g. used for bowls or croquet should be cut to approximately 1.5cm.

Soil pH Too Low

Soil that is too acidic will usually produce poor grass growth. Whatever soil you have in your garden, the only way to check its pH value is to use a soil pH test kit.

To test the soil pH and effect on grass growth in your garden, take a soil sample from directly underneath the turf. For accuracy do this at a minimum of 6 sites on your lawn. If the results show that the soil below the grass is too acidic (a pH value lower than 5.5) then lime in the form of ground limestone can be added at a rate of 50g per m^2 to increase the pH value. Do this every year between October and December and keep using a pH testing kit until you have corrected the pH value of the soil so that it is more suitable for healthy grass growth (pH value 5.5 - 7.0).

Poor Drainage and Lots of Wet Weather

Plenty of rainfall is good for a lawn providing it is well drained. You want the soil just below the turf to hold on to enough moisture to sustain strong growth, but you do not want excess water to build up just below the turf because this will result in moss growth and poor grass growth.

It's a fine balancing act, because a well drained lawn will also require more irrigation during long dry spells in the summer months. Follow the guidance in the lawn maintenance section and regularly aerate the soil by hollow-tining and scarify out the thatch to increase airflow around the grass roots.

Moss growth is usually more prolific on the lawn in shady parts of the garden. Most grass species thrive in areas of the garden that get plenty of sunlight, moss thrives in the shadier areas. Increase light levels in shadier areas by thinning out overhanging trees and large shrubs.

Grass that is well fed and watered during dry spells and receives adequate sunlight will compete against and usually choke out moss. When you have rectified the problems that cause moss to

grow in a lawn you will still need to rake out small amounts of moss; it is unlikely, whatever the conditions that you will completely eradicate it from the lawn. Many lawn feed treatments also contain a moss killer.

As mentioned before, the moss killer should be applied and allowed to do its job before raking out the dead moss. Raking healthy moss may cause it to release its spores and make the problem worse on your lawn.

Other Lawn Problems

Drought

In long hot summers when lawns do not receive sufficient irrigation, brown straw-like patches may appear on the turf. Eventually as the soil becomes more and more devoid of moisture the whole lawn can be affected. The problem is often more severe on soils that are free draining and do not hold on to moisture well. Refer to the notes previously in 'Irrigating an Established Lawn'. During periods of drought, don't cut the lawn so often and raise the height of cut.

Undernourished Lawns

If a lawn is generally poorly with slow growth and a high percentage of weeds and moss it may just be hungry. Refer to the Lawn feeding section.

Rectifying Humps and Hollows in a Lawn

Lawns that you inherit when you move into a new home are rarely perfect and will usually have imperfections that you want to try and rectify. An example of this can be lumps, bumps and hollows in a lawn that can be annoying especially when you are mowing. To rectify a lump, bump or hollow in a lawn, cut a cross into the turf and fold it back to reveal the topsoil beneath.

In the case of a hollow, more topsoil can be added to raise the level. If you are rectifying a hump in the turf, some soil can be removed. The turf is then carefully folded back into place and watered for a week or two afterwards to aid repair. On larger

areas of lawn that are uneven it will probably be necessary to remove the area of turf completely, level the topsoil properly and then replace the turf.

Repairing Damaged Lawn Patches

As discussed, pests, drought or disease can cause patches of dead grass in a lawn. These patches should be cut out with a sharp spade and removed. The area can then be re-turfed or topsoil added to raise the level back up and re-seeded. Repairing patches of damaged lawn should be done in the spring, this allows the repaired area a whole growing season to establish.

Conclusion

As with most things in life, ‘you get out what you put in’. If you invest time and effort, you can improve and / or maintain the grass in your garden so that it is grows healthily and looks great. It’s not all about hard physical work in the garden though, investing time in learning about and building your knowledge of grass and what it needs to thrive are just as important. By reading this book you will have done just that and will be well on the way to having your own *Perfect Lawn*.

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