



Lawn Establishment and Maintenance

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A lawn is a plot of ground that is utilised for aesthetic and recreational purposes. It is covered in soft, green grass. It is referred to as green carpet and is the foundational element of any landscape garden. This primarily creates harmony between the various garden elements, such as shrubs, trees, flower borders, and others, breaks up the monotony, and creates a contrasting impression. Because of its need on it, the lawn is referred to as the "heart" of the garden. Gardens and a lawn improve a home's look, enhancing its attractiveness, increasing conveniences and usefulness, and so increasing the real estate's monetary value. Keeping the proper lawn is essential to any landscape design. The lawn is also excellent as a playing surface since it lessens dust and ground erosion caused by heavy foot traffic from numerous players. The major purpose of using lawn grass in sports fields is to provide participants in sports like rugby, football, soccer, cricket, basketball, golf, tennis, and hockey with a cushioning effect. Lawn areas should be planned such that they receive direct sunlight, especially in front of houses, institutions, businesses, etc.

Land and site preparations

- ✓ In order to get lush green growth, it should be chosen in open sunny locations with plenty of solar light. The stones and clods can be cleared with little earthwork if the current ground is exploited.
- ✓ Depending on the temperature zone and the type of lawn grown, seasonal lawns are established and cared for differently.
- ✓ Land that is rich in organic matter should be chosen for lawn cultivation, and additional organic matter should be added as needed.
- ✓ Because it contains a lot of weed seeds, adding FYM is generally not advised. As a result, well-rotten leaf compost, vermicompost, and decomposed coir compost are utilised as substitutes.
- ✓ If the soil is particularly dense, gritty sand might be added by removing the top 20 cm of dirt. Site preparation entails excavating, levelling, and nourishing the soil with organic

manure. The ideal soil pH range is 5-5.6. Additionally, the roller must move around the surface. To enable soil particles to settle, the soil should be watered.

- ✓ The grass commonly used for lawn all over India is *Cynodondactylon*, which is very hard and can be grown in any type of soil. This grass is also known by other names like hariyali, doob, Bermuda grass.

Lawn planting techniques

1. Seeding: This approach is the most traditional and well-known. One hectare of land requires about 25 to 30 kg of seeds to be sown. The seeds are combined with twice as much finely sieved sand, and they should be sown in the opposite direction on a windless day. Light rolling is applied after seeding, and lawn sprinklers or rose cans are used to water the plants liberally. The germination of seeds takes three to five weeks.

2. Turfing: It is the fastest and most expensive method of lawn growth. Pests, illnesses, nutritional deficiencies, and weed seeds should not exist in the turf grass. From the grass nursery, the turf should be cut uniformly in squares, rolled for our convenience, and transported to the needed spot. The area should be well levelled, and turf grasses should be kept compact to prevent rolling. Using a hose or lawn sprinklers, water should be applied to the entire turfed area.

3. Dibbling of roots: This technique is time- and money-consuming. Small portions of grass roots should be put at a depth of 10 to 15 cm on flat soil for when it rains and gets wet. Following seeding, the soil needs to be compacted. The roots grow underground and disperse over the course of about six months. A somewhat compact grass can be maintained by regular rolling, shifting, and watering.

4. Turf plastering: In dry and arid places, this technique is not particularly effective. This allows for the free acquisition of a significant amount of submerged grass, which can then be correctly cut into both long and short pieces measuring 5-7 cm. Two baskets of freshly cut grass should be well mixed with a basket of fresh garden soil, a basket of fresh cow dung, a shovel of wood ash, and the necessary amount of water. The grass will grow in roughly a fortnight this manner.

5. Hydroseeding: This rapid, less expensive form of lawn establishment produces grass growth in approximately a week. It has a high rate of germination. Grass seed, fertiliser, mulch, and soil additives are mixed in a tank before being applied to the soil using a specialised nozzle to create a slurry. This process is known as hydroseeding. With this technique, seeds germinate quickly, and after three to four weeks from the hydroseeding date, the lawn can be mowed.

6. Astro Turf: This artificial lawn is a common choice for playgrounds and rooftops in wealthy nations. It is a surface constructed of artificial fibres that is intended to resemble real grass. It doesn't need watering or mowing and can tolerate intensive use, such as in sports. Generally speaking, playgrounds and airports use astroturf.

Maintenance of lawn

1. Weeds: Weeds should be pulled as soon as they appear to prevent them from spreading. Carefully remove unwanted plants with the use of a hoe. The most challenging plant to get rid of is purple nut sedge/motha because of how deeply ingrained its roots are. Using a long, narrow shovel with a blade length of 1 to 1.5 cm, this should be pulled up by the roots as deeply as feasible (khurpa). All weeds must be pulled up by the roots, and they must never be permitted to produce seeds.

2. Irrigation: Early in the morning is the ideal time to water the lawn. Water can be administered now without evaporation reaching the roots. After noon, water evaporates quickly, and irrigating at night increases the risk of disease. Frequent irrigation is preferable

to providing uniform water. To conserve water and labour, watering should be done via sprinklers. Particularly, water stagnation ought to be prevented.

3. Manures and Fertilizers: To keep lush growth, fertilising the grass three times a year is sufficient. Applying urea or ammonium sulphate at rates of 100 kg FYM/100 sq m and 1 kg/50 sq m during the months of February, March, June, and July, as well as October, is quite advantageous.

4. Mowing: Mowing should be done at short intervals and seed stalks should not be produced. Avoid cutting grass too short since doing so harms the grass, hinders the development of deep roots, and encourages weed growth. It is not advisable to harvest grass while it is damp. Make sure the blade on your mower is fresh and sharp. As soon as there is enough grass to mow, do so on the new turf. Usually, approximately three weeks after planting, the grass will need mowing if the weather is favourable and you have followed all the proper procedures.

5. Sweeping: To remove any cut grass that may have fallen from the mower box, it is crucial to properly sweep the lawn after each mow. Every morning, the fallen leaves and other debris are also cleaned up. During the season when deciduous trees shed their leaves.

6. Rolling: It is a technique for resolving minor surface irregularities, notably those brought on by foot traffic. It compacts the soil, which is a result of roller mass, roller diameter, air-filled porosity, moisture content, grass roots, and density. Light rolling is advised in heavy soils, however strong rolling after each weeding helps to maintain a level surface.

7. Dethatching: It is the process of removing the living roots, crown, and stems of the grass (thatch) from the top layer and a layer of dead and decaying organic detritus. Thatch formation in grasses is brought on by excess nitrogen and water, chemical imbalances in the soil, macro organisms, fungicides, etc. Deep penetration of the knives removes more quantity of accumulated thatch in the lawn and grounds.

Prevention of diseases in lawn

1. Maintain soil pH in accordance with the needs of the lawn.
2. Properly preserving soil fertility.
3. Providing water to support the lawn's health, durability, and resilience.
4. Use safe mowing techniques.
5. Continue removing old or dead grass and regularly aerate the soil.
6. The use of pesticides in cases of extreme infestation.

Disease	Symptoms	Cultural control	Chemical control
Leaf spot (<i>Bipolaris sorokiniana</i>)	<ul style="list-style-type: none"> • Formation of lesions on the infected blades • Lesions begin as elongated spots with fan centres and a purple black border. • Generally develop in spring and fall, but may be observed any time throughout the growing season. 	<ul style="list-style-type: none"> • Mowing the leaves at the proper height • Removal of excess thatch layers • Irrigate at regular interval to avoid any stress • Avoid excess of Nitrogen fertilization 	<ul style="list-style-type: none"> • Spray of mancozeb or chlorothalonil or Iprodion or Liquid copper concentrate fungicide is effective against leaf spot.

Fairy Ring (<i>Basidiomycetes</i>)	<ul style="list-style-type: none"> • Circular patterns of dark green grass that sometime appears in lawn or grounds • They may be green rings or they may have mushrooms around their perimeters particularly in the early morning hours. 	<ul style="list-style-type: none"> • Sufficient Nitrogen application • Sufficient water to prevent from drought • Avoid burying grade stakes and other wood debris 	<ul style="list-style-type: none"> • Spray Triademefon, Azoxystrobin, Flutolanil
Brown Patch (<i>Rhizoctoniasolani</i>)	<ul style="list-style-type: none"> • Blights the leaf blade from the tip to down • May damage sheaths and crowns as it progress • Can attack most of the cool and warm season grasses 	<ul style="list-style-type: none"> • Include a moderate nitrogen program, particularly during spring an early summer for cool-season grass • Remove excessive thatch 	<ul style="list-style-type: none"> • Use of fungicides viz., mancozeb, thiram, Flutolanil, Chlorothalonil, Triademefon, Propioconazole
Necrotic Ring Spot (<i>Leptosphaeriaakorrae</i>)	<ul style="list-style-type: none"> • Begin with the standard 'Frog eye' pattern • In latter stages, patches grown together to blight the large section of the area 	<ul style="list-style-type: none"> • Core aeration • Avoid drought damage • Spray Thiophanatemethyl, Azoxystrobin, 	<ul style="list-style-type: none"> • Spray Thiophanatemethyl, Azoxystrobin, Fenarimol

Conclusion

Everyone needs to spend time alone each day in today's hectic and demanding world. The act of sitting on the lawn relaxes the mind and helps one forget their daily concerns. Nowadays, having a grass in the backyard is also a prestige symbol. A grassy piece of land is referred to as a lawn. It primarily promotes consistency among the garden's elements and breaks up the garden's monotony. The lawn improves the attractiveness of the garden and also acts as cushion in playgrounds. The upkeep Lawn care involves more than just watering and mowing; it also involves utilising the proper tools, maintaining your equipment, employing environmentally friendly landscaping supplies, increasing your home's energy efficiency, and

other things. A lush, green lawn helps regulate heat pollution, lowers noise pollution, and prevents soil erosion and subsequent stream pollution. Establishing a lovely lawn requires a lot of work and requires careful planning, starting with the choice of the best grass species, soil preparation, comprehension of environmental and cultural requirements, planting, aftercare and maintenance procedures, and management of insect pests and diseases. Maintenance of lawn requires little patience and care, however the final result is always worth waiting for as it gives very beautiful and soothing effect to the landscape

References

1. Cook, T. W. (2002). Practical lawn establishment and renovation.
2. Hathi, H. S., Parmar, D. L., Babariya, A. B., & Prajapati, K. (2020). Lawn Establishment and Maintenance. *Vigyan Varta*, **1**(8), 33-37.
3. Thurn, M. C., Hummel, N. W., & Petrovic, A. M. (1994). Home Lawns Establishment and Maintenance.
4. Tian, P., Chhetri, M., & Fresenburg, B. S. (2022). Cool-season grasses: lawn establishment and renovation.
5. Velmurugan, M., Anand, M., Davamani, V., Rajamani, K., & Pugalendhi, L. (2020). Methods of Lawn Making. *Biotica Research Today*, **2**(5 Spl.), 190-192.