



# TURF MANAGEMENT



**GREEN DREAM**  
AGRICULTURAL

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## Mowing

practices are perhaps the most important single factor contributing to a well-groomed appearance and the longevity of any turfgrass area.

The height at which a given perennial grass can be cut and still survive for extended periods is directly related to its ability to produce enough leaf surface to keep up photosynthetic production of food. Basically, this ability is related to the type and habit of growth found in the grass. (The length of internodes, the number of stolons or rhizomes, and the number of basal buds all influence the amount of leaf mass produced by a given grass; hence, its ability to withstand low heights of cut.)

Creeping type plants, such as Bent grass, when properly fertilized and watered are able to produce adequate leaf surface at very low heights of cut. Kentucky bluegrass and fine leaf fescues must be cut relatively high (1½ to 2 inches) because they cannot produce enough leaf mass at low heights to sustain the plants. If bunch type grasses, such as tall fescue or ryegrass, are cut close, too much leaf surface is removed and the plant no longer can carry on enough food making activity to maintain satisfactory growth. Bunch type grasses should be cut 2 to 3 inches in height.



## Aeration

Aeration can be done as often as is practical, i.e. at monthly intervals, with the frequency increasing according to pitch usage, soil conditions etc. Type of aerator can be varied between Spiker/Slitter, Hollow Tine and Solid Tine. Depth of aeration will vary between 25mm for the Spiker/Slitter, to 100mm for the Hollow Tine and up to 250 mm using the Vertidrain. The Vertidrain is particularly beneficial in the cool season, which is the period of highest use. Using the machine on maximum dwell angle, compaction is relieved and the turf lifted fractionally, allowing for soil air to be replenished and surface water to drain. It is also beneficial to Aerate the soil following from Verticutting works.

For many soccer fields, the only periods of limited use during the growing season are early May and August. That means you can aerate the field to help the turf stay healthy. We like to use a spiker, run over the turf in 2 directions. If you topdress the field with sand, you'll smooth the divots created by the spiker, and help keep the surface as even as possible. Aerating frequently with different equipment at different times will help make the turf stronger. In April, we recommend core aerating the entire field, followed by topdressing with sand (and slit-seeding). Later in the year, use solid tine aeration to reduce compaction without leaving cores all over the field, and core aerate again at the end of the fall playing season.







## Topdressing

The need for top-dressing will vary according to the degree of turf establishment, the amount of usage, grass type and variation of surface levels. The ideal time to perform top-dressing activities is following on from Verticutting and Aeration works. The minimum machinery required to achieve this work on a Soccer pitch would be a tractor-mounted, PTO driven hopper of at least 0.4m<sup>3</sup>.

The material for top-dressing should be screened sand, free of stones and other debris. It should be dry to facilitate loading into the hopper (with screen fitted) and spreading from the hopper opening. The rate of discharge needs to be adjusted to achieve the correct amount of sand being applied. It is best to apply a thin layer of sand in opposing directions, followed by drag-matting to work into the turf surface. Irrigation should follow completion of top-dressing works.

Topdressing is the application of a uniform thin layer of soil or finely granulated organic materials applied over the turf surface. It is used to level the playing field when minor variations or depressions are apparent, help to amend physical soil properties and create a better growing environment for the turf and help reduce thatch.

If you have access to a readily available topdressing material, the necessary application equipment and a budget that can afford this practice, topdressing can be an important part of your management program.

## Weed Control

Armyworm (*Spodoptera* spp.) is the main pest of turf grasses and routine observation is required to recognise early symptoms. Patches of turf look dry from a distance, closer observation will reveal that the green parts of the grass plant have been eaten away, leaving the stem. During the day, Armyworm bury into the soil surface to escape the heat, and come out to feed after sunset. Thus, it is important to apply Pesticides as late as possible in the day to ensure that the poisons are present at the time that the pest is emerging to feed. Ants can be a minor problem to soccer pitches, and can easily be dealt with by spot treatments of chemicals drenched into the soil surface.

Good cultural practices such as verticutting, aeration and correct fertiliser management will reduce the possibility of diseases of turf. It is also important to maintain regular, routine mowing practices, with mower blades maintained in optimum condition. The main diseases of sports turf are *Rhizoctonia* ("brown patch") and *Pythium* (Blight). When either symptoms appear, usually in the early part of the summer when humidity and temperatures are increasing rapidly, the above-mentioned cultural practices should be done and followed up with fungicidal treatments.





## Watering

The irrigation requirement for sports pitches can be defined as follows:

- December, January & February - 3 Run Days per week, at 10mm/m<sup>2</sup> precipitation.
- March, April, October & November - 4 Run Days per week at 12mm/m<sup>2</sup>
- May, June, July, August, & September - 6 Run Days per week at 15mm/m<sup>2</sup>.

Irrigation is best applied in two cycles, i.e. late evening (after use of the pitch) and early morning, avoiding windy periods of the day that affect sprinkler efficiency.

The system should be run on test once weekly during the day to observe sprinkler performance and to make repairs and or adjustments accordingly.

Generally, most fields need to be watered every day or so from June through September, and as needed the rest of the year to keep the soil moist. Applying at least 1" of water per week will help to maximize turfgrass growth. If you overseeding, or spot-seed thin areas, you'll want to water lightly and frequently at first to promote germination of the new turfgrass.

In the winter, it's good to water lightly but frequently, to help nurture new grass plants. As the season progresses, you can gradually decrease the frequency and increase the amount you apply each time you water.

If the fall season is dry, irrigate with an eye on the weather forecast. It's usually better to keep the turf a little dry than too wet during the playing season. That reduces the chance that sudden heavy rains could severely compromise competition



## Pest & Disease Control

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## Dethatching

Verticutting is the mechanised operation to remove thatch from turf. The minimum standard of machinery to achieve this job on a soccer pitch would be a pedestrian operated (walk behind) unit such as a Ryan Mattaway. Tractor-mounted equipment would be more suitable; usually comprising of 3 scarifying units hydraulically powered. It is normal practice to mow the turf short, verticut in one direction, remove the thatch using a tractor-mounted sweeper, and then repeat the operation in the reverse direction. The pitch should be generously watered as soon as possible after Verticutting to reduce turf stress. New developments in this field would encourage greater use of the FINC-CUT PLAK mower to reduce the build-up of thatch, and significantly reduce the need for intensive verticutting which can have a considerable recovery time.

## Overseeding

Overseeding helps to fill in the thin spots, and keeps your field looking much better year-round. We like to overseed the field with a three-way perennial ryegrass blend at the end of September, putting down about 15 pounds of seed for each 1000 square feet. Areas where the turf is especially bad can be spot-seeded in October. Overseeding is especially important where there is year-round use of a field. If you spread 1/4" of sand over the field after overseeding, you'll get better seed germination, because the topdressing promotes seed-to-soil contact.

## Line Marking

The pitch marking must be done on a weekly basis as a minimum, and possibly again during the week if matches are being played and the lines have begun to fade. Water based emulsion paint, diluted with waster makes an adequate product for line marking, although the manufactured products specifically designed for the job have a superior brightness and last longer after application.



## Fertilization

The frequent removal of Nitrogen from the grass plant caused by mowing activities and constant irrigation practices demands the frequent application of Nitrogenous fertilisers to replace it. Straight N fertilisers such as Ammonium Sulphate and High N fertilisers such as a 20-40-5 ratio are ideal. As a general guideline, application would normally be on a once monthly basis, but could be reduced according to season and grass type. The aim is to produce a dark green, dense healthy sward, the Horticulturist will decide when and what to apply. Application rates should be between 50 and 75 grs. per square metre. The quantity of fertiliser is to be used should be divided in half and applied at intervals in opposing directions. Applying fertiliser in the opposing direction eliminates missed areas and the "streaked" look; however, wheel marks can appear on the turf if the second application is made immediately after the first. Irrigation should be applied following on from fertiliser application, this may dictate early morning or late afternoon application if windy conditions prevent even and adequate coverage to ensure the fertiliser is completely washed in.

This maintenance program includes very aggressive fertilization, especially in the spring. That promotes rapid recovery from the competitive stress of the previous season. Irrigate the field after applying fertilizer, you can make the heavy Nitrogen applications all at once; otherwise, you should split the fertilizer into two applications two weeks.

In the summertime, apply one-half pound nitrogen and a full pound of potassium to protect the plants during the heat of the summer, and to help resist disease.

Applying most of the nitrogen in the fall helps the turf recover from the stresses that competition puts on it. The very best time to apply nitrogen is right after the last mowing of the season, while the grass is still green. At this point, shoot growth slows to a stop, but the roots continue to grow. The extra nitrogen you put down will be stored by the root system, and will help the turf green up early in the spring, as well as helping it withstand summer stresses the next year.

A complete fertilizer (like, for instance, 12-12-17) is good to apply in May to make sure that nutrient levels are strong as summer approaches. In the summer itself, fertilization calls for urea (45-0-0) for maintenance applications of one pound of N. An additional application of K in October helps the turf stand up well to the winter, and the winter fertilization application of ammonium nitrate (34-0-0) helps to maintain ryegrass growth.







## Pitch Construction

Green Dream understand that all sports venues, from Olympic pitches to community sport grounds, must enhance the lives of the people around them.

We know how to respect the heritage of much-loved buildings, while keeping them relevant; how to create world-class facilities for school children and professional athletes alike; and how to minimize disruption during construction – making sure these crucial spaces stay in place for those who need them most.

We are helping clients enrich communities and electrify audiences with striking and sustainable venues. Our teams have a long history supporting the creation of diverse sports facilities for a rich array of clients.

Ensuring full use of such large spaces best serves the public – and it makes good business sense.

At the point of your enquiry, we look to understand not just your budgets or objectives in the shorter term but seek to offer sustainable solutions to ensure the pitch surfaces continue to function over the years.

Here, we are passionate about construction football pitches that are fit for purpose and sustainable, which is why we offer services and solutions for maintenance.

We offer the following on our design & build construction packages:

- Initial site survey
- Produce drawings, specifications and cost estimates
- Earthworks
- Ground Stabilization
- Drainage including secondary drainage
- Under-soil Heating
- Pitch construction builds up aggregate including stone carpets & root zones
- Popup automatic Irrigation systems
- Laser grading machines for surface perfection
- Topsoil management.
- Seeding or turfing & grow in maintenance
- Big Roll Turf – lay and play
- Maintenance advice post contract.

We carry out end of season renovation services such as:

Koro Field Top Makers – to reduce thatch levels and introduce desirable hard-wearing grasses

Verti drainer – for de-compacting surfaces

Sand amelioration – to improve the soil structure

Hollow tinning – to promote root growth

Top dressing – to improve surface levels

Over-seeding – for reinstatement of thin swards

Fertilizing – promoting vigorous growth

We carry out renovation for many client years on year for ensuring the playing surfaces are going to be in optimum condition to withstand the wear and tear of the oncoming season.

GD are driven by a desire to deliver excellence. We have a top to bottom understanding of the football pitch construction and renovation market and continually look to innovate sustainable and affordable solutions to the benefit of the end-user, the footballer.





## Maintenance Equipment

### TRIPPLE CYLINDER MOWER

(Typically: Hydraulically powered cutting units, 26-inch width, and 7 blades floating - head units with grass catcher.)

### ROTARY MOWER

(Typically: Single blade, 560mm width of cut, 5 HP single cylinder engine, grass catcher, gear driven.)

### LINE MARKER

(Typically: Battery operated pump and adjustable spray nozzle, 25 litre capacity paint tank with clean water tank for flushing after use.)

### VERTICUTTER

(Typically: Pedestrian self-propelled unit, 11 HP engine, adjustable depth of operation, or Tractor-mounted PTO/hydraulically driven unit.

### SPIKER/SLITTER

(Typically: Tractor-mounted 1200mm width unit.)

### SOIL RELIEVER

(Typically: Tractor-mounted, PTO powered "Vertidrain" unit, c/w 10-inch solid tines 18mm diameter, adjustable for depth of penetration and angle of entry, front & rear roller to closely follow surface levels.)

### AERATOR

(Typically: Tractor-mounted/trailed multi-tine aerator, 100mm length hollow tines, operating width - 900mm.)

### POWER BRUSH

(Typically: Tractor-mounted PTO powered brush-collector unit, 1200mm operating width, brush adjustable, and hydraulic tipping mechanism.)

### TOP-DRESSER

(Typically: Tractor-mounted PTO powered Top-dressing unit, 1200mm operating width, adjustable rate of application.)

### BOOM SPRAYER

(Typically: Tractor-mounted PTO powered pump, 6 metre width of application with nozzle spacing at 500mm, boom height 350mm above surface to be sprayed. 3 nozzle types, Fine, Medium and Coarse nozzle ratings.)

### FERTILISER SPREADER

(Typically: Tractor mounted PTO powered 500kg hopper capacity "Cyclone" type spreader, spreading width 6-10 metres, adjustable rate.)

### FINE-CUT FLAIL MOWER

(Typically: Tractor mounted PTO driven flail mower, 900mm, 1200mm or 1500mm width, 1200 litre hopper capacity, hydraulically raised and lowered to facilitate emptying. Fitted with 2mm Flails as standard, can be fitted with scarifying blades for dethatching of large lawn areas.)























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