Spring Maintenance

from the National Pitch Maintenance Workgroup

Spring is a time for regeneration and putting things right for the start of the season, here are some maintenance tasks for the spring and considerations for the season ahead.

Mowing

Mowing in early spring can be difficult at times depending on your pitch profile and winter usage. Weather also plays a huge part in deciding if it is an appropriate time to mow. Frost in early spring can hamper your intentions but it is advised to stay off all pitches until frost has cleared. Ensuring ground conditions are suitable for machinery is important.

When you decide on the best time for mowing you need decide which type of mower is fit for purpose. A general rule of thumb when mowing is not to take more than one third of the plant off at one time. Regular mowing will help thicken up the sward which in turn will produce a better-quality playing surface. The frequency of mowing will depend of the growth rates but depending on the standard of pitch 1-3 times per week is advised. GAA pitches are usually cut between 25-40mm in height and there are two types of mowers to choose from.

Rotary Mower

This has a rotary blade and in addition to cutting, it can be used like a hoover after training sessions and matches to suck up any debris left lying on the surface. Good practice for this type of mowing would be to brush your pitch prior to cutting as it stands the grass up which will produce a cleaner and more uniform finish to the cut. Sharp blades for a cleaner cut is also very important as is collecting clippings as it helps reduce the build-up of organic matter on the surface, which in turn will produce a healthier living environment for the grass to thrive. Having an annual service during winter months is essential for the upkeep of a mowers.

Figure 1: Two types of rotary mower

Cylinder Mower

Cylinder mowers are excellent for presentation leading up to matches and will produce a finer cut to the grass. The setup of the mower to include quality and height of cut is very important so understanding this process will in turn produce a better-quality playing surface. Most mowers will have 3/5 heads and each head should be checked before cutting. If there are any signs of the grass plant tearing or being pulled by the blades you must stop mowing and check the quality of cut. For good presentation string lines should be used to keep your lines straight during mowing. Mowing in different directions is recommended so the grass plant is not lying in the same direction all the time. The mowing pattern can be at the groundsman's discretion but it is recommended to vary the direction of cut and on sports pitches to mow lengthways and crossways alternately.

Figure 2: Two examples of a cylinder mower

Spring - Turfgrass Fertiliser Requirements, some considerations

Turfgrasses require at least 16 nutrients for normal growth and development. Nine of the sixteen are needed in much larger quantities than the other seven. These nine nutrients— carbon, hydrogen, oxygen, nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur— are called macronutrients. Nitrogen, Phosphorous and Potassium are the main nutrients applied in granulated form as fertilisers.

Soil testing is an important first step in ascertaining if there is a deficiency in any of the nutrients whilst the pH of the soil should also be determined as this will provide an indication of how available these nutrients ae likely to be. Testing in the spring can be used to help inform the fertilizer programme and strategy for the season. On soil based pitches it may not be necessary

to test annually, but it is important that the sample is representative of the pitch (area and rooting depth) and that the results are properly interpreted. If testing occurs on a regular basis ensure that the samples are taken at the same time each year and sent to the same laboratory as extraction techniques can vary from laboratory to laboratory.

A complete fertilizer will contain nitrogen, phosphate and potassium, listed on the label as 18:6:12, 9:7:7 or 14:3:6 for example. A product labeled as 18:6:12 means that it contains 18% nitrogen, 6% phosphorous and 12% potassium. Nitrogen is the most significant element as it will determine growth rate, density and colour. Nitrogen sources can be categorised as being either quick acting or slow release. Quick release nitrogen sources (e.g. Ammonium sulphate, potassium nitrate, ammonium nitrate) are soluble in water and once in solution the nitrogen is available immediately but they do have the potential to burn the turf if applied at relatively high rates as well as being more easily leached.

Figure 3: Amenity grade fertilisers should be used

A small amount of readily available nitrogen is important in the spring to assist early growth and sward development. At this time, we are less dependent upon soil temperatures and microbial activity for the release of nitrogen from other sources (e.g. Urea, organic or slow release). It also means that we are much more in control of our destiny as growth responses can be monitored following fertilizer application and more could be applied if necessary.

Amenity grade fertilizer products should be used as the prill size is smaller and tends to be more uniform than agricultural products. This allows for a more even distribution of product at low rates. Remember it might be desirable to apply one or two applications in the spring, particularly

if the product has a nitrogen content of 9 to 10%, rather than applying the product all at once. Excessive growth should be avoided as it will tend to push top growth at the expense of root development, this also means more mowing.

Deciding when to apply the first application can be tricky, too early and there will be little or no response and the application might be wasted. A little moisture in the soil and some light rain after application is good as it allows the fertilizer to dissolve and become available for the roots to take up the nutrient. There should be some signs of natural growth before applying the first spring dressing, perfect timing is usually associated with the "false spring" but for a slightly more scientific approach a good rule of thumb is to use the T200 method – average daily temperatures from 1 January, in ºC, are added (treating any negative numbers as zeros) until 200 degrees are reached.

Applying a product with 10% quick release nitrogen at 300-350 Kg/ha will provide enough nitrogen for a decent growth response to get things started.

Controlling Usage

Usage levels on GAA pitches are very dependent on the quality of the construction, the grass species being used and the standard of maintenance. The amount of use that a pitch can receive will also vary at various times of the year depending on temperatures, rainfall and growth rates of the grass.

When growth is poor, usage levels of only two to three hours per week may be possible, particularly if soil conditions are unfavourable. On the other hand, in good growing conditions with a well-constructed pitch, it may be possible to sustain usage levels of ten hours per week and sometimes more. Recording pitch usage hours, monitoring pitch performance and introducing a pitch rotation system at GAA clubs with more than 1 pitch will help protect the playing surface and give some indication as to what is achievable.

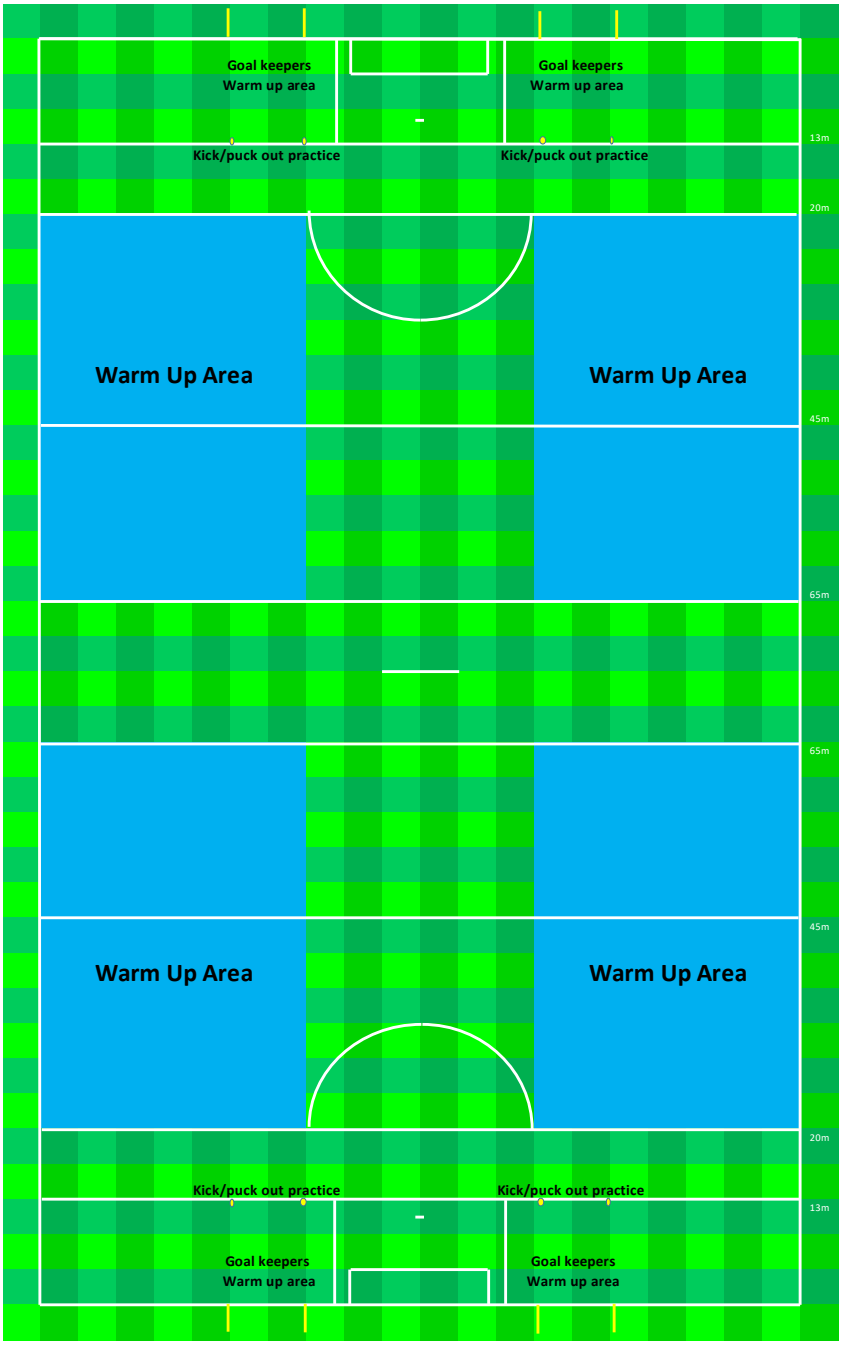
Figure 4: - Decline in pitch quality due to excessive use

Sustainable levels are very much influenced by the quality of the pitch that is required and it is essential to recognise that excessive levels of use will both increase maintenance demands and reduce the quality of the surface.

In GAA club facilities, if one pitch is used for important matches then try and use the training pitch for warm ups to help protect the main pitch. It may be possible to use warm up poles as goals for matches/training and mini-pitches at right angles to the normal direction of play to spread the wear across any pitch and to avoid a concentration of wear within the main pitch areas.

Introducing pitch rules/regulations and communicating with team managers/coaches will help in the management of spreading wear and protecting high wear areas. Contacting the teams prior to training or matches and using illustrations to show where warm ups, training drills, goalkeepers warm up areas and kick/puck out practice areas should take place on the pitch will help protect the pitch from severe damage but it will also aid in quicker recovery times.

Figure 5: An example of how to spread wear



The effects of shade (stands in a stadium or trees in a park) and reduced air circulation can have an adverse effect on sustainable usage levels.

It is important that there is a policy for determining when play can take place under adverse weather conditions. For example, there can be severe damage if a pitch is used when it is badly waterlogged or when it is frozen, particularly after partial thawing which leaves the surface soft

but the underlying ground is frozen. If matches are played when pitch conditions are very poor, this can lead to damage which will affect the pitch for the remainder of the playing season.

Figure 6: Waterlogged goal mouth which should not be used

When planning the programme of use for a pitch, it is important to make sufficient time available for essential maintenance operations. Some maintenance operations are best spread across two to three days to allow, for example, recovery from mechanical operations, to give time for fertiliser to be washed in after application and to allow recovery after seeding. There must also be sufficient gaps within the programme of use to allow more intensive maintenance operations to be carried out.

Turfing Goalmouths

The turfing of goalmouths is a renovation process carried out if the existing surface has failed, which may be because of poor construction and/or high usage levels. Turfing is a last resort only explored once levels have been lost and the playing surface becomes unstable and dangerous to players. There are several key stages to carrying out a re-turf:

1. Preparation

First decide how big an area is to be re-turfed so that turf can be ordered ahead of any preparation work, always add 10% to this to allow for wastage. Preparing the area correctly is vital to the success of the re-turf. The existing damaged surface should be removed using a turf cutter to the depth of the new turf.

GAA goalmouths generally suffer from compaction and relieving prior to laying turf is essential. This can be done with pedestrian or tractor mounted equipment or even a fork if aeration machinery isn't available. In cases of layering and severe compaction it is preferable to turn over the soil with a rotovator. In heavy soils, it may be worthwhile to add some drains or mix sand into

the existing soil before establishing levels. Once the compaction has been relieved the surface should then be consolidated by 'heeling in' with your feet to prevent sinking afterwards. The ground should be firm but not compact.

Levels should then be re-established to blend seamlessly into the surrounding playing surface and finished with the back of a rake ready to receive the turf.

Figure 7: Goalmouth prepared for turfing

2. Turf Selection

Sourcing a suitable turf for your pitch is perhaps the most important part of the turfing process. If you have the space available to set aside a 'turf nursery' this should be seriously considered as it will have logistical and financial benefits. This could in its simplest form be an area that is unused and may contain decent quality turf. This area of land should be set aside for growing turf in similar conditions and using the same maintenance programme so that the turf is as near identical to the original as possible allowing it to blend seamlessly to the existing pitch once it has been laid. There are a few general rules to abide by when selecting turf for harvesting and these are that the turf is:

- Healthy but hungry (ready for a feed once laid)
- Dense in grass coverage
- Free from weeds

There are also specifics to consider when selecting or growing your turf:

a) Soil Type
It's important that your turf is grown on a free draining sandy soil. By choosing a turf with a high sand percentage you will have a greater chance of keeping your goalmouths in good condition throughout the season particularly during periods of wet weather. The drawback to using a sandy turf is that it will require time to sufficiently root before play or it may crumble. If the turf you choose has a high clay or silt content you will almost certainly encounter problems with drainage, which will ultimately lead to the goalmouth's deterioration.

b) Grass Species
Lolium perenne, or what's commonly known as Perennial ryegrass is the species most suited to the high wear of GAA pitches. It's often grown on turf farms as part of a mix with some form of fescue (*Festuca)* to aid establishment and to provide strength to the turf for harvest. Ideally the turf selected should be dominated by ryegrass with very little fescue as it does not tolerate wear as well.

c) Turf Depth and Size
Thin cut turf (20-30mm) will root much faster than thick cut turf (30-40mm) but will be very vulnerable to play until a substantial root structure has developed, while thick cut turf due to its depth and weight could in theory be played on instantly.

The size of the turf (width and length of rolls) will depend on how you plan to lay it and whether it's thickly or thinly cut. Every joint will be a weak point until the turf has established so ideally to keep joints to a minimum, large rolls are preferred. Large rolls will need to be laid by machine whereas smaller rolls can be laid by hand.

1) Laying the Turf
The new turf should be laid onto the prepared surface so that it is level with the adjacent surface. Areas may need to be raised or lowered as you go. Start by laying the turf along a straight edge. When joining turf, you should allow a small overlap and cut through both turves with an edging iron, before removing the two off-cuts to ensure a tight, clean joint. On subsequent rows the joints should be staggered like brickwork. Boards should be placed on newly laid turf for walking along and working from. Turf should be 'well butted together to prevent gaps. Always push turf into a joint, never stretch the turf by pulling it.

Figure 8: Turf Laying

2) Aftercare

As mentioned earlier, turf should be hungry on arrival and ready for an application of fertiliser. This will ideally coincide with a springtime application for the pitch. In dry conditions the turf may need to be watered to prevent it from shrinking. Once the turf has begun to root it can be top-dressed and brushed with a light dusting of sand to smooth out any imperfections. Mowing can begin as and when is needed in the right conditions to ensure the machinery will not compromise the quality of the re-turf.