

Basic Guide to Turf Cricket Pitch Preparation



Written by
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CRICKET VICTORIA

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ABOUT THE AUTHOR

I love the great game of cricket and understand the importance of good cricket pitches, I have an extensive background in cricket pitch preparation and playing cricket both in Australia and overseas.

In 1986, I was employed by the City of Camberwell (now Boroondara) and prepared pitches at local and sub district level. I have also worked on pitches in England, and on golf courses in Melbourne and Scotland.

I played over 200 games of Premier cricket with Essendon and North Melbourne. Also, I was a wicket keeper / opening batsman and was captain coach at North Melbourne. At this time, I was selected in the Essendon team of the century and am a life member at Essendon.



For two years, I was a member of the Victorian State squad and played numerous Victorian second eleven games also having played cricket in Darwin, and at club level in Yorkshire, Leicestershire and Scotland in the UK. During this time, I have played on many pitches that varied in standard. This experience has given me a good appreciation and understanding of what makes a good pitch.

For the past eleven years, I have been teaching Turf Management at Northern Melbourne Institute of TAFE (NMIT) where I teach a range of subjects including cricket pitch preparation.

This training booklet was written to assist people with little or no experience in cricket pitch preparation to prepare a suitable playing surface.

I hope you enjoy this book and that it assists you in your pitch preparation.

Good Luck,

John Shannon

INTRODUCTION

Cricket pitches should be prepared hard and flat to produce a good playing surface. The aim is to have a pitch that offers assistance to the batsman and the bowlers. For this to occur, we need a surface that offers pace and bounce. Slow pitches are difficult for the batsman to play shots on and offer no assistance to the bowler.

To achieve a fast surface we need an even coverage of grass and then we compact the wicket through rolling. Evaporation will dry the surface of the pitch and the turf grass roots will assist in drying the pitch deeper down in the profile. This is needed to create a pitch with pace and bounce.

Pitches with little or no turf grass cover tend to only dry on the surface and not at depth. These pitches will not allow compaction to depth and will usually produce slow low pitches that will only last for one to two days play. They will be OK for the first few games of the season if you have limited time to renovate and prepare the pitches after football season. Wickets prepared at the start of the season are difficult to prepare with bounce due to cool weather conditions in and around Melbourne and usually minimal grass cover.

Cricket pitch preparation goes against most of the standard turf management practices. For example, compacting soils and cutting the turf very short are not desirable turf management practices. In pitch preparation, compaction and closely mown turf are needed to produce a good pitch that is hard and fast. We need to let the pitch recover after games and change to another pitch due to these practices.

Cricket pitch preparation is an enjoyable and important role. Good pitches promote the game and develop good cricketers.



Toorak Park pitch and oval

If the pitch is too soft

- It will be slow
- The ball will make indentations in the pitch
- The ball may seam around slowly
- The ball may pop up dangerously

If the pitch is too dry

- It will break up easily
- It will crumble
- It will take spin
- It may have lots of small cracks that do not hold together and come away from the pitch making it dangerous
- Grass cover will help hold a dry pitch together
- If it is too dry when you are rolling you will not get adequate compaction, in fact, you will break up the pitch

If the pitch is too hard

- The pitch cannot be too hard when the game starts, our aim is to produce a hard surface. Hardness is a desirable characteristic and you are aiming to achieve this with good compaction in the rolling process.
- During the preparation stage the pitch should not dry out too much and become too hard. As this will induce stress on the grass, reducing the deeper drying effect the grass cover has in the pitch through transpiration.

The ideal pitch

- Will offer something for everyone
- Allow bowlers to get pace
- Will enable batsmen to play their shots
- Will enable all fielders to be involved in the game
- Has an even cover of turf grass
- Has a straw colored appearance
- Has a shiny finish
- Is visually appealing and gives the players confidence



Good pitches promote the game and junior development

TERMINOLOGY

Thatch - Is living and dead organic matter (grass, stems and roots) just below the turf sward/surface. This is not desirable on a cricket pitch as it will lead to a slow pitch. Turf surfaces with too much thatch are spongy and soft.

Renovation - Mechanical work to remove thatch or aerate the profile. This is done to restore or renew the turf to a good condition.

Renovation of a wicket table should be done after football season to remove debris (sand, organic matter, strapping tape etc) using a scarifier and reestablish turf cover. Most Australian clay wicket soils crack open and self aerate when they dry out. Do not spike, core or verti drain the wicket table as this will lead to weak spots in the pitch where cracks will appear.

pH - The level of acidity or alkalinity in the soil. This ranges from 0 to 14 with 7 being neutral. Each turf grass species has an ideal range. You should try to keep your pH between 5 and 7, depending on what grass species you are using. Perennial Ryegrass and Couch grass have a preferred pH range of 6 to 7.

Salt levels - It is desirable to have a low salt reading in your soil profile, however turf grasses have a limit to how much salt is desirable. Salt levels can be attained by testing your soil. For cool season grasses salt levels should be below about 500 parts per million, and warm season grasses below about 1,000 parts per million. Clay soils do not leach salts easily due to their slow infiltration rate. So carefully choose fertilisers on cricket pitches as they range in their salt content. A simple soil test for salt levels will help you.

Compaction - A reduction in pore space by molding soil into the voids. This is pushing soil particles closer together and reducing the gaps between these particles. This is done on a cricket pitch by rolling, as you want to compact your pitch to get it hard.

Pore space - Gaps between the soil particles that may be filled with air, water or roots.

Non capillary pore - Large pores that allow for gravitational drainage. These will be filled with air at field capacity. These allow room for root growth and oxygen for the roots.

Capillary pore - Small pores that retain moisture at field capacity. This water is available to be taken up by the roots. Clay soil has lots of capillary pores and are able to retain plenty of water.

Available water - The moisture held in the profile that is can to be taken up by the plant. This is between field capacity and wilting point.

Waterlogged - The soil profile is filled with water and there is water sitting on the surface.

Saturation - The soil profile is filled with water and there is no water on the surface. All the pore spaces have water in them.

Field Capacity - This usually occurs 24 hours after saturation. The non capillary pores have drained through the force of gravity and the capillary pores retain moisture. A clay soil will hold about 35% gravimetric moisture at field capacity.

Wilting point - Roots have used up as much water in the profile as they can and the plant begins to wilt. There is still some moisture in the soil profile, however the plant can not extract it because it is held very tightly onto the soil particles. A clay soil will still have about 10% gravimetric moisture in the profile at wilting point.

Oven dry - There is no moisture held within the soil profile. For this to occur, the soil will need to be placed in an oven at 105° to 110°

Clay - A soil that contains a minimum of 40% clay particles. Clay particles are very small, below 0.002 millimeters in size (two microns).

Silt - Soil particles that are also small but not as small as clay. These particles are between 0.002 to 0.05 millimeters in size.

Sand - The larger particles that make up a soil. They come in a range of sizes, very coarse sand, coarse sand, medium sand, fine sand and very fine sand. These range in size from 0.05 to 1.0 millimeter in size.

Wicket table - The area where the heavy clay is, usually in the middle of the oval. This is the area where the cricket pitches are prepared. The size of this area will vary depending on how many pitches you have on the wicket table. The size is generally 25 meters long by 15 meters wide based on a five wicket table.

Grass clippings - Dried grass cuttings are rolled into the pitch to cover any bare areas on the pitch. This is done to mask bare areas, to assist in more even drying and to get an even color over the whole pitch so it is visually appealing to the players.

Turf grass sod - Grass that has been cut and can be relayed onto another area. This saves you from seeding and gives you an instant cover of grass. However you need to allow time for the roots to develop before it should be used. If you are using sods on a wicket you need to ensure the sod has been washed (soil removed) as introducing a different soil on the sod will destroy the soil structure of your wicket table.

Sprigs - Cuttings from grass that can be used to establish a new turf area. These are only successful on creeping grasses e.g. Couch. These cuttings need to include the stems (rhizomes or stolons). The leaves will not be successful on their own. Couch sprigs are often put into bare areas on the pitch in an attempt to get a full cover of grass, especially where the batsmen and bowlers have worn out the grass cover. Wash all soil off spriggs prior to planting.

Seed - Is the result of a sexual process. The male pollen and the female ova recombine to form the new offspring which is the seed. Seed will germinate if given water, light and temperature, and will produce a turf sward. Seed can be stored for long periods of time and is readily available with lots of different types of grasses available. It is important when ordering seed to get good quality fine sports turf seed and ask for the recent varieties, or cultivars, suitable for pitches or the oval.

Water – If sodding, sprigging or seeding a new area you need to have an adequate water supply especially at establishment time. There is no root system in the soil at this stage to extract water. It needs to be added frequently in light applications and water needs to be of good quality. Recycled water may be high in salts or have other issues and this can have an effect on germination, turf grass performance, the soil, and pitch performance. Adequate water needs to be applied to the pitch during preparation. (H₂O needs to be of good quality). See more details on page 14 on watering the pitch.

Germination - Is the initial stage of growth of the seed. This requires water, sunlight and temperature. Ryegrass seed takes about five days to germinate in ideal conditions. After germination, and when you have adequate leaf growth, you can get a mower on the area and cut the grass. This may occur at around 14 days after seeding. You should cut the tips off the leaf with a rotary mower. This helps the grass thicken up and should be done every few days. Sports turf grass requires frequent cutting to produce a quality surface and you should never cut off more than one third of the leaf in any one mow.

Grasses for turf pitches - The main grasses used on pitches are Couch Grass (*Cynodon dactylon*) and Perennial Ryegrass (*Lolium perenne*)

Couch is a warm season grass and is suited to warmer conditions ideally between 25 to 32 degrees Celsius. Perennial Ryegrass is a cool season grass and its preferred temperature range is around 15 to 25 degrees Celsius. The grass will survive at temperatures outside this range however it will not perform at its best. See page 45 for further information.

Curator - Is the person responsible for the pitch and oval. He is the manager of the turf and is sometimes called a “groundsman”.

Wicket - The stumps and the balls make up the wicket. Sometimes the playing surface or the pitch is referred to as the wicket.

Pitch - This is the area that the game of cricket is played on. It should be flat and hard and have the crease markings painted on. The markings will be 66 feet long by 8 feet 8 inches wide however you usually cut and roll a bigger area than this, 10 feet wide and around 78 feet long. See page 28 for further information.

EQUIPMENT NEEDED

For pitch preparation

Roller - There are two main types of rollers.

The most commonly used are walk behind rollers that are powered by petrol driven motors. The roller may be empty, water filled, sand filled or concrete filled. The roller will vary in weight depending on what it is filled with. A water filled roller is the most commonly used and it will weight about one to one and a half tonnes.

The other type of roller is a ride on roller. These have a roller at the front and one at the back and the operator is seated in the middle. These usually weigh about two and a half tonnes or more. (See pictures below)



Hand roller - It is light enough to pull along. It may be used in the early preparation of pitches; on pitches that are too wet to put on a heavy roller, or when you are rolling in grass clippings.



Cylinder mower - This mower cuts the turf grass like a pair of scissors. It has a blade at the front of the mower on the bottom known as a bed knife. Above this is a cylinder with blades that rotate around on an angle and touch the bed knife to cut the grass. On the back is a roller and on the front is a small roller. The grass clippings are thrown forward into a catcher. This mower stripes up the grass with a dark and light colour when cut in one direction and back in the other.



Height bar - This small tool is used to set the height of cut for the cylinder mower. The height is set by measuring the gap between the bar and the underside of the nut. It is simply adjusted by screwing the nut in or out and adjusting the mower. The underside of the nut is placed on the bed knife and the ends of the bar are placed on the front and back roller. Ensure the height is the same all the way across the cut. In the photo below the height is set at 20 millimeters.



String line - It is used to mark out the outside of the pitch you are about to prepare.



Marking frame - Is a frame to lie on the ground and paint in the creases of the pitch.

Paint - Used to paint the creases. It may be powdered titanium dioxide mixed with water and painted on with a paint brush or spray paint. I prefer the spray on acrylic paint as it gives a better finish and you can roll the pitch soon after spraying. However, it is more expensive.

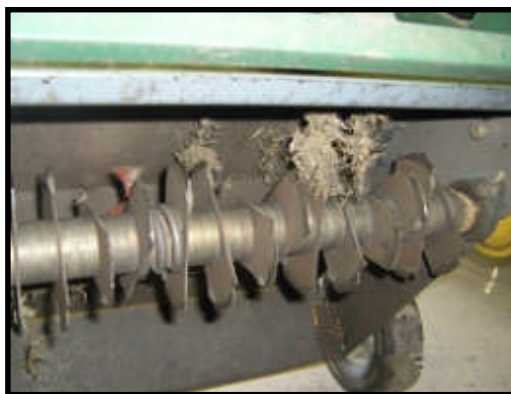
Scraper - A simple paint scraper used to remove any soil or grass off the roller.

Water - Obviously used to water the pitch during preparation and to assist in putting on the grass clippings. The hose connection needs to have a fish mouth nozzle as this will allow you to accurately monitor how much water is applied.

Grass clippings - Dried grass clippings are needed to be applied to any bare areas on the pitch as part of the preparation process. See more on page 19.

Renovation – see photos and details on page 40 the Renovation Topic.

Scarifier - This is also known as vertical mowing. Steel grooves cut into the turf and soil to remove debris from the wicket table. This should be done after the football season as part of the renovation process, or to thin out turf grass cover during the season. It may also be done after laying sods when the roots are growing. This is to get an even grass cover, to mask any sod joins and to stimulate root growth.



Rotary mower – Is used to pick up the debris after scarifying. Also used to cut new seeded turf when it is young, as the cylinder mower may pull the young plant out of the soil.

Vacuum - Can also be used to pick up debris after scarifying.

Tractor mounted broom - Can also be used to remove debris off the wicket table after renovation. The wicket table needs to be firm enough to allow a tractor on it.

OCCUPATIONAL HEALTH AND SAFETY

Occupational Health and Safety (OH&S) is a legal obligation to ensure you are working in a safe environment and taking care of yourself and others. Most OH&S regulations are common sense. However, when people become familiar with machinery and equipment they can become complacent and may try to take short cuts.

These actions can be very dangerous to both the user and others.

Occupational Health and Safety is covered by a Government Act (Occupational Health and Safety Act 2004) and it is law to abide by this. To make the act easier to understand there is an abbreviated format called A Guide to the Occupational Health and is available online.

The website is www.worksafe.com.au. The guide to the OH&S Act 2004 is available on www.workcover.vic.gov.au under the heading of "Laws and Regulations" then "Forms and Publications".

Accidents do happen and sometimes they can be fatal. Working with machinery can be hazardous and care must be taken when using it. A roller that weighs between one to four tonnes can injure, or even kill if you are run over, and this has happened even to experienced groundsmen. You roll the pitch in a forward direction and return in a backwards direction (you do not turn the roller around at the end of the pitch) so extra care needs to be taken when rolling backwards.

Care must be taken when working with cylinder mowers as many accidents have been documented and the main causes are complacency or inexperience. You should never have your hands or fingers anywhere near the cutting unit at any time. This is especially the case when back lapping or clearing units. Blocked reels should be freed using a stick or something similar, never your hand.

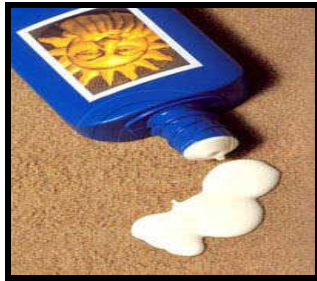
Personal protective equipment (PPE) should be used when operating machines. Ear muffs and steel cap boots are the main protective equipment needed when rolling or cutting a pitch. The sun and heat are other hazards. Sunscreen, a hat and long clothing should be worn to protect the skin from burning and increasing the risk of skin cancer. Some rollers have canopy options which protect you from the sun and also offer roll over protection.

Dehydration is another problem working outside in hot dry conditions. Ensure you drink plenty of water before, during and after work.



Do

- ✓ Wear ear muffs
- ✓ Wear steel capped boots
- ✓ Apply sunscreen
- ✓ Wear a hat
- ✓ Wear long sleeved shirts and long pants
- ✓ Clean the roller when it is stationary and the engine is off
- ✓ Make sure people are well away from operating machinery
- ✓ Cutting cylinders can spin due to hydraulic oil pressure even when the engine is off, so always use a stick to move the cutting cylinder on the cylinder mower.
- ✓ When manual handling, ask for assistance if something is too heavy



Do not

- × Wear loose fitting clothing that can get caught on machinery.
- × Leave the roller unattended when it is moving.
- × Remove debris from the roller when it is moving.
- × Place your hands or fingers anywhere near the cutting units.
- × Try to adjust the angle the roller is going at when it is stationary, instead do it when it is moving. This is much safer as it requires less effort.
- × Leave hoses or containers lying around where someone may trip over them.
- × Do not rush when doing your work



Just remember that the more you are trained, the more you are prepared!

THE ART OF MAKING A PITCH

Making a cricket pitch is a little bit like making a cake in a number of ways. It is imperative to get the steps and the timing correct in the preparation of a pitch to achieve a successful outcome.

Remember the following:

- There is an order in which you need to carry out tasks
- You need all the required components to have a successful outcome
- The products used need to be of high quality
- If you take short cuts you will end up with a poor product
- You cannot prepare it in a shorter time than is required otherwise you will compromise the result
- Once it has been prepared and you have the end result it is difficult to make adjustments or fix it, if it is not to your liking. To improve it you would need to start again.

There are many theories in pitch preparation and people have different ways of making a cricket pitch. At the end of the day as long as you produce a good pitch that performs well, and recovers after the game, you have been successful.

Preparation may vary due to individual's beliefs, soil types used, weather conditions, equipment available, time available and other circumstances.

The key aspects of a successful pitch preparation are:

- ✓ **Watering**
- ✓ **Rolling**
- ✓ **Turf grass cover**
- ✓ **Having a level surface**

There are many other steps required in the process however I believe watering, rolling, turfgrass covers and having a level surface are the most important. If you can get these correct you most likely will have a good pitch.

- Watering is probably the hardest and most crucial one of these. Knowing when to water and when to roll is vital. Experience is helpful in this area, and it is trial and error for new curators/grounds men. Hopefully you will finish with a fast flat surface
- To achieve a fast surface you need an even coverage of grass and compact the wicket through rolling. Evaporation will dry the surface of the pitch and the turf grass will assist in drying the pitch deeper down in the profile. This is needed to create a pitch with pace and bounce
- It is important to wet the pitch up all the way through the soil profile to saturation point, as discussed in the next chapter. This will allow for consistent and deep drying of the profile and a hard pitch
- Pitch preparation may vary from around two weeks for a test match to as little as five days for a local club Saturday game

TASKS IN PITCH PREPARATION

1. **String line the outside of the wicket.** Once you have decided on which pitch you are going to prepare you need to define the perimeter. The best way to do this is to use a string line. My preferred method is to have the corners of the wicket table defined either through a dot of paint or a flat metal peg. Once you have the corners of your table defined it is a simple case of measuring across from corner to corner of the wicket table and putting a peg on each corner of your new pitch. An example of this is if you are using the second pitch on the wicket table (see page 36 on pitch rotation), you would measure across and put a flat peg in the ground 10 feet and another one at 20 feet. This is if your pitch is 10 feet wide. This gives you the two corners at one end of the pitch. Repeat the process at the other end. You now have the four corners of the wicket marked. It is worth checking these measurements. Next you need to tie the string around each peg and pull it tight.



Note the string lines down the sides of the pitch

2. **Watering the pitch.** It is most important to thoroughly wet up the soil profile to depth. If you shallow water then it is difficult, or impossible, to produce a hard, bouncy surface. Clay soils for cricket wickets are predominantly made up of very small particles. These particles retain the water and do not allow the water to flow through the profile quickly. Clay soils have a low infiltration rate and an understanding of this is important when wetting up a cricket pitch. If Merri Creek wicket soil has an infiltration rate of approximately two millimeters per hour so a lot of water is put on at one time, most of it will run across the surface and not infiltrate into the profile. It is not good practice to put a sprinkler in the middle of the wicket table and come back in four hours to turn it off, as has been done in the past. This will lead to about eight millimeters sinking into the wicket table and 60 millimeters running off the table and soaking the oval near the wicket table. All wicket tables should have a slight fall from one side of the table to the other, usually a minimum of 1% fall. This allows excess rainfall to run off the table so the wicket table is not constantly wet, both during the football season and the cricket season. We need to apply water numerous times in small amounts and allow it to soak into the profile. How much water to use and how many applications will depend on the soil type and environmental conditions. I would recommend wetting up the wicket slowly until puddles appear on the surface and then stop. Then come back about an hour later when that water has soaked into the profile and apply more water. This may be done with an automatic irrigation system or a hand held hose. Ensure the wicket receives an even amount of water.



Using a knife to check pitch hardness



Hand watering the pitch

You may need to repeat this process up to five or six times during the day for this initial wetting up of the pitch on the Monday. To check if you have wetted up the soil profile to depth push down with a metal probe or stake or knife to feel if water has infiltrated down to about 100mm in depth. Be sure not to walk on the pitch when watering it otherwise you will damage it with your footprints. Walk on the adjacent pitch.

Water restrictions, imposed due to the drought, may impede your chances of achieving this level of watering because of the limited watering time allowed. However if you contact your local water authority they may be flexible in when you can water. They will not allow you to use any more water or water for longer periods but they may give you some flexibility on when you can apply the water that better suits your needs.

After rolling, the turf will be stressed so we may need to apply a small amount of water to renew the turf and wet up the top few millimeters of the profile. If we wet up much more than this we will be undoing the benefits of our rolling by softening up the pitch. If we don't apply a small amount of water the plant will be stressed and won't function properly, and this will reduce the deeper drying capacity of the grass in the soil profile. This should be done late in the afternoon if it is hot. This water will assist the supply of water that has been evaporated from the surface. During the cricket season, in Melbourne, average daily evaporation ranges from 3mm to 6.5mm, so we need to replenish some of this to keep the turf healthy on our pitch. The roots play an important role of drawing moisture out deeper in the profile and if our turf grass is overly stressed then this will not occur efficiently.

3. **Rolling the pitch.** Choosing when is the correct time to commence rolling is one of the most important and difficult decisions to make for new curators. The pitch needs to be firm enough to get a roller on it and to enable compaction but not too hard as little or no compaction will occur. The biggest mistake that can be made when rolling the wicket for the first time is rolling when the pitch is too wet. This may bring moisture up and blacken the surface, it may create deep indentations on the pitch or the soil may stick to the roller and these damages the pitch. The weight of the roller will have an influence on when you are able to carry out your first roll on the pitch. A light hand held roller is able to get on a moister wicket than a heavier ride on roller. This may need to be done late in the week if the pitch is too moist to use a heavy roller. For local clubs, a 1 to 1.5 tonne motorized walk behind roller is generally used in pitch preparation. I prefer to use the heavy roller instead of the walk behind roller if conditions are suitable.

As a guide to determine if the surface is ready to commence rolling, you should be able to push your thumb into the pitch and make a slight indentation. If this is the state of the pitch then it is ready to begin rolling. This will occur about a day or two after the deep watering depending on weather conditions. Rolling pushes the small clay particles into the gaps or pore spaces between the soil particles and this creates a more dense soil profile. For this to occur you need some moisture in the soil and some air. The water acts as a lubricant allowing the clay particles to slip into the gaps. If the pore spaces are filled with water you cannot get compaction as the water is not compressible and will only be pushed around in the profile. Rolling a wet pitch can create a wavy uneven surface so do not roll a wet pitch. You need to evenly roll the pitch, and the length of rolling is usually around 30-40 minutes.

Basically, when you have achieved maximum compaction for the moisture content in the pitch it is time to stop. If you find the pitch is too moist, stop rolling immediately. Rolling can bring moisture to the surface so in the early stages of preparation extended rolling is not desirable. Once you have rolled in the morning evaporation will take place and you may be able to roll for a similar time in the afternoon. See the next topic, "The weekly time frame" for rolling frequency and times during preparation.

All soils compact best at a moisture content known as optimum moisture content (OMC). This allows a soil to be moulded into its maximum compaction at the OMC. If we do not roll the soil in this condition, we will not be taking advantage of achieving the best compaction. Every roller weight will have a different OMC. For example, the heavier the roller, the drier the OMC. So, using light rollers require wetter soil and heavier rollers need drier soil to achieve the best compaction. As the wicket dries out, a heavier roller is needed to improve the compaction and achieve a hard wicket.

There are three main directions when rolling a pitch. These are long ways or longitudinal rolling, cross rolling and diagonal rolling.



The front small roller on the string line



Longitudinal (up and down) rolling

Longitudinal rolling is simply going up and down the pitch in the direction of play. This is the most common and efficient way to roll. As stated earlier you need to evenly roll the pitch so when you get to the end of the pitch with the roller adjust your roller when it is still moving to place it on an angle to return up the pitch about half a roller width from your last run. The harder the pitch the easier it is to adjust the direction. Remember the roller will be returning up the pitch backwards so care must be taken. If you try to move the rollers' angle when it is stopped it is very heavy and difficult to move. You can damage the turf surface and your back. If longitudinal rolling, use the string lines as a guide to keep a straight edge on the sides of your pitch. The best way to do this with a motorised walk behind roller is put the edge of the front small roller on the string line when rolling backwards. If you do this when going forward it is difficult to keep a straight line, however it is much easier doing this going backwards.

Cross rolling is simply rolling the pitch from side to side, the opposite direction to longitudinal rolling. So you only travel 10 feet and come back at an angle to the other side of the pitch. This is done to flatten out any undulations in the pitch that are not able to be leveled with up and down rolling. The downside to cross rolling is that it can damage the edges of the pitch where you adjust the angle of the roller to make your way back across the pitch. After cross rolling it is a good idea to have a couple of longitudinal rolls on the outside edge of the wicket where the turns have occurred to flatten out any creases made by the edges of the roller. Some people do a great deal of cross rolling in the preparation process. Others do it early on in the preparation when maximum benefit will be achieved. Some curators do not do it at all. I recommend you do it as there are real benefits to achieve a flat pitch.

Diagonal rolling has a similar result as cross rolling however it allows you to take longer runs. Usually you would go at a 45 degree angle to the pitch and next time you diagonal roll do it from the other side of the pitch which is at the opposite angle. The main aim is to try to achieve a flat pitch. Some curators diagonal roll at numerous angles and for a large amount of their pitch preparation. Cross rolling and diagonal rolling are sometimes done on the whole wicket table before renovation, during winter and at the start of the season to level any undulations on the whole wicket table.

4. **Cutting the pitch.** The pitch should be cut with a cylinder mower, and so should the wicket table. The height you cut these at will depend on the grass types used, the time of year and your personal preference. You should keep in mind the height should be the best for root development as this is most important for good pitch performance. Generally the wicket table should be maintained at around 10 millimeters height. This may be higher at the start of the season to protect the wicket table, and I would recommend letting this get longer towards the end of the season to around 15 millimeters so the turf has a better chance of survival in the football season. The height of the pitch about to be played on should come down slowly during preparation.

It is important not to cut the height of your grass down too much in one go as this stresses out the turf and does not allow the root system to function to its full capacity. Do not remove more than one third of the plant's leaf in any one cut. So cut the wicket down to 8mm at the start of preparation and cut it each day taking off around one millimeter each time. The final height of the wicket should be around 4 millimeters long. Cutting it much longer than this may give too much assistance to the bowlers as the ball may seam around. Cutting the pitch down to 2mm or so will damage the turf sward and mean the pitch will be easily damaged and very slow to recover after the game.

It is a good idea to **stripe up the wicket table**. This means cutting in one direction and returning next to your last cut in the other direction. This lays the grass in the two different directions and shows up as light and dark leaving a visually appealing pattern.

However **the pitch itself can not have any stripes** showing as this would be distracting for the batsman and an advantage to the bowler as he/she would have a line to aim at. So you need to cut up the pitch and return on the same line you just cut, effectively double cutting. Continue this all the way across the pitch and you will have all the same appearance for the whole pitch.



The cylinder mower used to cut the pitch



Cutting the pitch

5. **Applying grass clippings.** Grass clippings play an important role in pitch preparation and presentation. They also help keep the shine on the ball. If your pitch has a full cover of grass and an even colour then you do not need grass clippings rolled into the profile. However most pitches need grass clippings especially pitches early on in the season and the second week of a game as wear will damage the turf coverage. You simply need to have a supply of grass clippings that you have cut off your pitch during the week. This need to be dried and the same colour as your pitch. This is easy to achieve if you only have a couple of bare areas on the pitch as you do not need many clippings.

If you have lots of bare areas and limited grass cover, as is often the case early in the season, you need lots of turf grass clippings. They are not easy to acquire and evenly dry at this time of year. You may need to get some grass clippings from the wicket table, a near by bowling club or from the outfield and dry them. Careful they are not too wet and go moldy. Spread them out on a concrete area in the sun, turn them regularly and they should dry. But it may rain or wind might blow them away. So this is not as easy as it may appear depending on conditions and availability.

Some curators lay the clippings thinly spread on wire racks in the shed where they can have air flow and this can be a successful way of drying them. The key is to have plenty on hand. To stick the clippings to the pitch you need to lightly water the pitch. You may do this on Thursday or Friday before the game. I prefer doing this on Thursday to have an extra day in grace in the event of something going wrong (wet weather, clippings don't stick etc).

How much water to apply will depend on weather conditions. If you wet up the top few millimeters of the profile, up and down the pitch with the hose and fish mouth nozzle will probably do the trick. Allow a few minutes for the water to soak in. Then have all your clippings on hand in a bucket, quickly apply them evenly to the bare areas and any other areas you feel need clippings on the pitch. You can throw them out or rub the clippings between your hands to distribute them evenly. Clippings end up increasing the organic content of the top layer of the soil.

High organics, equals slow wickets and should only be used sparingly with just enough to evenly cover the bare areas. The roller should be at the end of the pitch, start it up immediately after the clippings have been applied. Roll the pitch long ways on high speed. You will leave small indentations in the pitch with the edges of the roller. Evenly roll the pitch for about five minutes. The watering will have wet the clay up and clay is sticky when wet.

The rolling will have pushed the grass clippings into the clay and they should stick. Clippings may stick to the roller and make clumps and these can leave indentations in the pitch. If this starts to occur then stop the roller on the end of the pitch and remove these clumps. If they haven't stuck one of two things will have probably occurred.

One is the pitch may have dried out and so the clippings would not stick, or the pitch did not have the bare soil exposed so the clippings did not make direct contact with the clay. This is usually due to old clippings not removed or organic matter on the surface. If the wicket dried before the clippings were rolled in you can just repeat the process with a little more water this time! It is a delicate balance to get just enough water and not too much. Hopefully you have some more clippings on hand. That is why you should always have a large supply of clippings. Once dried, they do last for quite a while. The other thing this process of rolling in clippings does is gives the pitch a shiny finish. So some people lightly wet the pitch and roll it even if they do not need to roll in clippings just to give it the shiny finish.



Dried grass clippings



**Indentations made in the pitch
when clippings are rolled into
the pitch**

6. **Marking up the creases.** This task is usually done on Friday, depending on weather. Allow plenty of time if you are marking up a pitch for the first time. The second week of a game it is a relatively quick process if most of the lines are showing from the week before. This task is explained in more detail with the dimensions of the pitch and creases on page 29. Crease markings are an important part of a pitch presentation. Nice straight lines that are parallel to the edges of the cut pitch and sharp edges all help with a great finish. It is easy to get this wrong, especially when you are first preparing pitches. Spilling paint, having wet paint and then rolling the pitch, lines not parallel or simply incorrect measurements are some of the mistakes that can be made. Take your time and have a neat finish.



The pitch marking frame



Stump hole setter

7. **Covering the pitch.** Most turf competitions now allow covers to be used. Some competitions have restrictions on when they have to be put down and when they can be used. Covers are a big advantage as you can control the amount of water being applied to the pitch. The other big advantage of covers is you will have less games washed out. This is a big plus to the players and to the satisfaction of the curator. It is very disappointing to have a good pitch all ready for play on Friday and it starts to rain. The problem with covers for a curator is they are very heavy especially if it is windy and storage can be an issue.

Some people prefer not to use covers as they can sweat depending on weather conditions. This sweat has a similar effect to watering the pitch. Hessian is usually used under the covers to soak up the sweat. You are better to use covers than to get an overnight shower on Friday night and the game get washed out. A heavy dew can also soften the wicket overnight so covers can reduce this problem. Always keep an eye and ear out for weather conditions and weather forecasts. The bureau of meteorology has an excellent website with weather forecasts and radar imaging, www.bom.gov.au is the site. Competitions usually have rules that everyone must put down covers on Friday night. Be up to date with your competitions' rules with covers and use them where possible to your advantage.



Covers on the pitch



Hessian used under the covers to soak up sweat

8. **Ready for play.** You should aim to have the pitch ready for play at lunch time on Friday if you are working on the wicket for most of the day Friday. If you are doing the pitch after work the try to have it close to ready on Thursday evening. This means if you get poor weather or a machine break down the pitch should be in reasonable shape. If you are able to work on Saturday morning then a final cut and roll helps put the finishing touches and leaves a nice appearance. Presentation and final appearance play a key role in the pitch, if the players like what they see then they will have confidence in the surface prepared. So try to achieve a nice even color, a flat pitch, sharp crease markings, and straight lines with your mower and roller on the edges of the pitch.

Preparing cricket pitches can be a very enjoyable and rewarding task

Walking away at the end of a pitch preparation having created something that is hopefully to your liking and to the players liking can be very satisfying. If it has not turned out exactly as you had hoped then you can make adjustments next week which is a constant challenge and driving force that always keeps you on your toes and learning. There are so many variables with weather, soil type, time constraints and other factors that no two weeks are the same, so grounds men are continually learning and that is stimulating. I hope you enjoy the challenge and all your pitches turn out well. Good luck.



THE WEEKLY TIME FRAME

Pitch preparation will vary depending on the standard of the game being played, and the time available to prepare the surface. A Test match pitch may take up to two weeks to prepare while a local club playing on Saturday may take as little as five days.

Below is a rough guide of the time it takes to prepare a pitch and the tasks involved. Use this as a guide however, it will vary depending on your time constraints.

It is beneficial to start your preparation about 10 days before the match starts. This means you will have two pitches being prepared at the same time, the one in use for Saturdays game and the new one you are starting to get ready for next week's game. It is better to take longer to prepare a pitch. This does not necessarily mean do more work on the pitch; just spread the tasks out over a longer period of time. You then have more drying time for your pitch and if you have adverse weather or something goes wrong during your preparation you should have a little time up your sleeve.



A pitch in the early stages of preparation



Nearing completion

Wednesday (11 days before game)

- Select your next pitch
 - Mark out the four corners and string line the outside of your pitch
 - Cut the pitch to 8 millimeters
 - Deep water the pitch as discussed in the last chapter on watering
 - Ideally the wicket table should be roped off if possible.
- The wet pitch will get damaged if people play on it or dogs walk across it.

Thursday

- Roll the pitch for 30 to 40 minutes in the afternoon or when you feel the pitch is ready to be rolled. See page 16 on rolling the pitch.

Friday

- Cut the pitch at eight millimeters
- Roll the pitch for 30 to 40 minutes
- Remove the string line and the pegs in the corner of your pitch for Saturday's game
- Place a small white dot of paint where the pegs were to allow you to find the same spot on Monday

If you are preparing pitches part time and have limited time then doing some of these tasks the week before the game will be a big assistance to the outcome of your pitches. Possibly water on Thursday evening during/after training and come back Friday afternoon/evening and give the pitch a roll. You will most likely be there preparing the other pitch for Saturday's game so a little more effort on the following weeks pitch will assist in the final outcome.

Monday

- Put the pegs and string line out on the pitch
- Now is a good time to repair the pitch used on the weekend (See page 35)
- Lightly water the pitch to replace some of the evaporation that has occurred in the past few days. The top few millimeters of the soil should be moist.
- Depending on the weather you may be able to roll the pitch, cross roll in the afternoon for 30 minutes

Tuesday

- Cut the pitch to 6 millimeters. (remember to keep all your clippings as you will need them later in the week)
- Diagonal roll the pitch in the morning for 30 to 40 minutes
- Cut the wicket table at 10 millimeters
- Roll the pitch up and down in the afternoon again for 30 to 40 minutes
- Listen and look at the weather forecast and if it is hot give a light water to the pitch last thing for the day

Wednesday

- Cut the pitch to 5 or 6 millimeters
- Diagonal roll the pitch in the morning for 30 to 40 minutes
- Roll the pitch up and down in the afternoon again for 30 to 40 minutes
- Again check the weather forecast to determine if you need to apply a small amount of water



Thursday

- Cut the pitch to 4 millimeters (game height)
- Lightly water the pitch and allow a few minutes for the water to soak in
- Spread your dried grass clippings (see page 19)
- Quickly roll grass clipping into the pitch
- Roll the pitch in the late morning for 30 to 40 minutes
- Roll the pitch in the afternoon again for 30 to 40 minutes
- Again check the weather forecast to determine if you need to apply a small amount of water



Bare area on the pitch



Covering the bare areas with grass clippings

Friday

- Cut the pitch to 4 millimeters
- Roll the pitch in the morning for 30 to 40 minutes
- Cut the wicket table at 10 millimeters
- Mark up the pitch. Use pegs to determine the middle stump position at either end. Place the marking frame down and paint in your creases. See the next topic for more details on crease markings.
- Roll the pitch in the afternoon for 40 minutes
- Remove the string line and pegs

Your pitch should be a straw colour, hard and ready for play



Saturday (game day)

If you are able to work on the pitch on Saturday morning then a cut and a roll will be beneficial.

- Cut the pitch to 4 millimeters
- Roll the pitch for 30 to 40 minutes

If permitted covers may be used during preparation to limit water on the pitch. These are a big help and do make the difference between a game washed out and being able to play. It is hard work putting them on. More details on covers on page 20.

Water late in the day during preparation

This will probably not need to be done in October and into November as drying conditions will not be extreme. The same may be the case late in the season in March. During the hot months you may wish to replace some moisture lost due to evaporation. Some curators do not do this at all as they believe it is counter productive. They believe replacing moisture undoes the good work of rolling. However the grass is under heat and rolling stress so small amounts of water help the turf grass to function. It is a balancing act between getting a hard pitch on the surface and keeping a healthy plant that is able to transpire removing moisture deep in the wicket profile that will give you a hard pitch to depth.

Rolling time six to eight hours

This is an adequate amount of time to roll a pitch during the preparation to achieve a good result.

If you roll at the correct time you will get maximum benefit from your rolling. Some people may be able to allow more time to roll and others less, however if you aim towards this total length of time you should be able to prepare a good pitch.

Part time curators may not be able to do all the above tasks. So compromises obviously need to be made. The key tasks can be carried out in the early morning and later on in the afternoon if you have another full time job. You may be only able to roll once per day. You can still make a good pitch, however less preparation time will probably lead to a pitch that is not be as hard or as consistent.

To measure the pitch hardness:

1. Use a cricket ball and bounce it onto the pitch (some use a golf ball). This gives you some idea; although the ball hardness will vary and how hard you bounce it will have an influence on the outcome! Bounce the ball along the pitch to get a feel for consistent hardness over the pitch and if the ball bounces to your waist it will indicate you have a pitch with good bounce. If it only bounces to knee height you will have a slow low pitch.
2. Push a metal probe/stake, screwdriver or knife into the profile of the pitch. You feel how hard the pitch is through the profile as you push it in and this gives you an understanding of the pitch hardness.
3. Use a Clegg impact hammer to get a digital reading of hardness. These are expensive at around \$7,000. You may be able to borrow one from time to time. They are a useful tool to inform you of how hard your pitch is and how even the hardness is by doing numerous drops up and down the pitch.
4. When rolling the pitch the easier it is to adjust the angle of the roller when moving back up the harder the pitch is.

To measure moisture content :

1. Push your thumb into the pitch surface and get a rough gauge.
2. Use a soil moisture meter such as the Theta probe which costs approximately \$800.
3. Take a small plug from the side or the end of the pitch. Weigh the sample and then weight the same sample once it has been dried in an oven for 24 hours at 110 degrees Celsius. Then use this calculation to determine the gravimetric moisture content.
Wet weight minus dry weight divided by the dry weight times 100 will give you an answer as a percent. This can be handy information to compare how moist one pitch is in relation to another and from feed back on pitch performance you can determine the preferred moisture content for your ideal pitch.

$$\frac{\text{Wet weight} - \text{Dry weight}}{\text{Dry weight}} \times 100 = \text{Gravimetric Moisture Content \%}$$

E.g. 124 - 108 divided by 108 X 100 = 14.814 %

You may wish to do this at several stages during the preparation.

To measure turf grass stress:

1. Look at the turf to see if it is wilting. The leaf will fold over and be limp. It may also look a darker purple colour.
2. You can purchase a pair of special sun glasses "Stress Detection glasses" that allow you to see the level of stress on the turf.

Feed back on pitch performance should be used as a useful tool to assist you in your future pitch preparations. The feed back can come from a number of sources:

1. The number of runs made and wickets taken
2. The umpires rating
3. The captains rating
4. Asking the players
5. Watch the game yourself if possible and see how the pitch performs
6. Having another experienced curator look at the pitch before or after play

In most competitions the umpires and the captains rate the pitch and outfield. These reports can be of assistance. They need to be kept in perspective as usually they have never made a pitch before and sometimes do not take into account the weather conditions encountered during preparation and other contributing factors. Also captains' ratings can be heavily influenced by the result of the game, whether they won or lost! You should make a point of reading these reports and take any relevant comments as an opportunity to make adjustments to your pitch preparation with the aim of producing even better pitches.

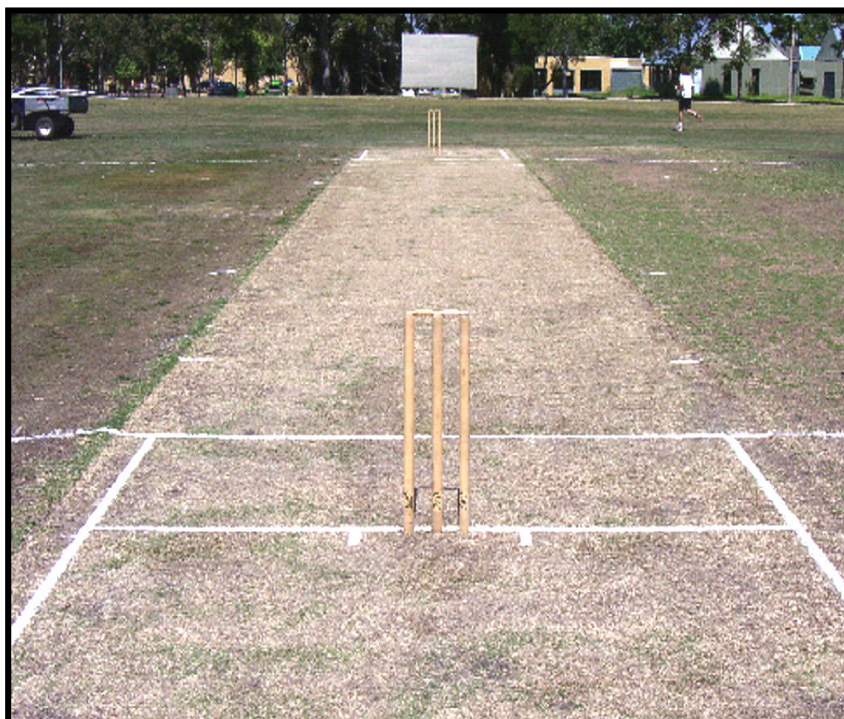
I recommend asking some of the players after the game or during the week at training how the pitch performed. This allows you to get to know the players better if you don't already know them and to get some useful feedback. It also shows you take pride in what you do, you care about producing good pitches and you aim to produce even better pitches where possible.



Rolling the pitch



Covering the whole wicket table



The pitch is now ready for play

MARKING UP A PITCH & DIMENSIONS

This is an important task in the process. Neat sharp defined lines can help in the pitch presentation.

However it is an easy task to muck up! If you hurry you may smudge the lines, drop paint, not get the correct length measurements, or the return crease may not be parallel with the cut surface.

I recommend you allow plenty of time to mark up the pitch, especially if you are attempting it for first time.

I also recommend using spray paint as the edges of the line are sharper and this give a better finish than the more common paint, titanium dioxide, a powder mixed with water. If using titanium dioxide use a dusk mask when mixing it in the powder form.

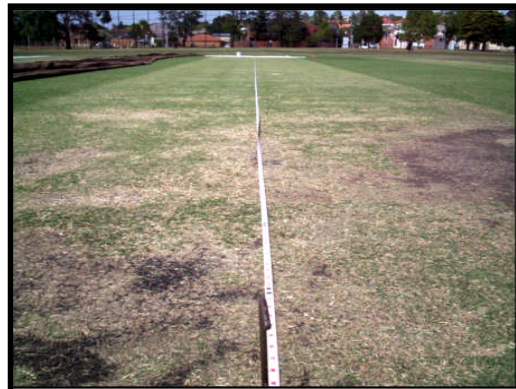
The pitch measurements may be in inches and feet (imperial) or in centimeters and meters (metric). The imperial measurements are nice round numbers. This is because imperial measurements were the ones used when cricket was invented. So if you are buying a tape measure I recommend you choose one that has both measurements, usually imperial on one side and metric on the other side of the tape. The nice round numbers are easier to work with.

The steps in marking up a pitch are:

- Measure the full length of the pitch you have cut out from the string lines at either end of the pitch
- Centre the pitch in the middle of these string lines. If the total length between the string lines or cut area is 78 feet then the wickets will be placed 6 feet in at ether end
- Place a peg 6 feet in from the string lines at both ends. Make sure the pegs are in the centre of the side string lines. For example if the pitch is 10 feet wide the peg should be 5 feet in from either side
- Double check that it is 66 feet or 20.12 metres between the pegs



Peg hole created to mark the middle stump



Tape measure to measure 66 feet

- Place the marking frame at one end of the pitch with the middle of the bowling crease (back edge) on the hole created by the peg. The back edge of the bowling crease is the end of the pitch so the back edge line needs to cut through the middle of the hole where the stump will be
- Do the same at the other end
- Mark the danger zones with a small mark of paint as shown below. A good way to keep the edges the same as the ones on the crease is to cut out the lid of a plastic ice cream container to a suitable length and the same width (1½ inches wide)
- If you use the paint that is powder mixed with paint then do not roll your pitch until the paint is dry. This is one reason why it is good to mark your pitch up early on Friday



The marking frame is parallel to the edges of the cut surface



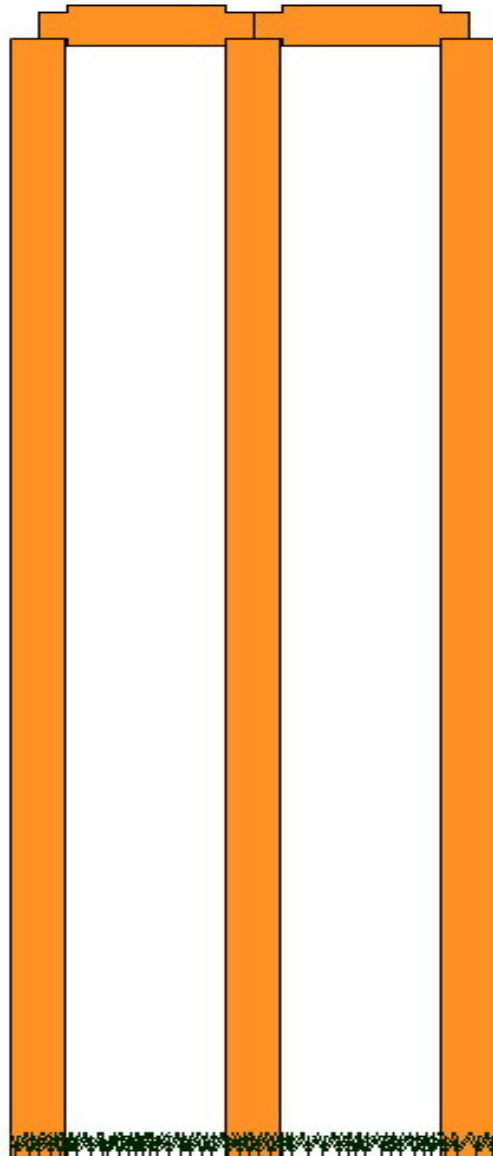
A well marked crease

See next page for the pitch markings and dimensions

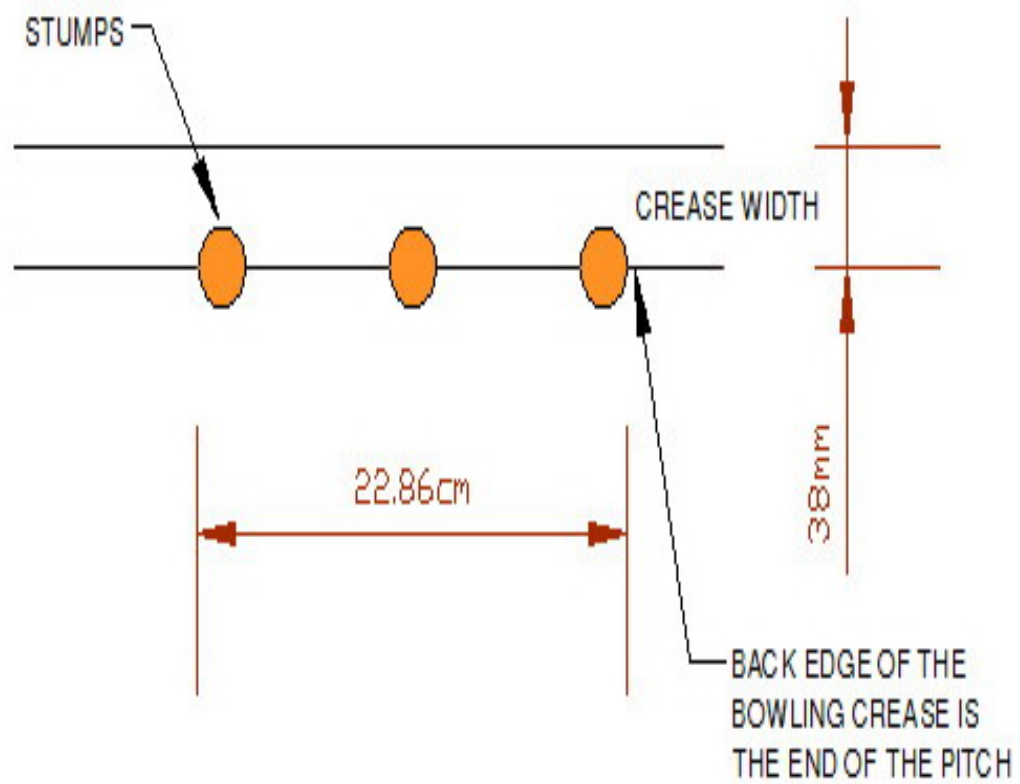
STUMPS

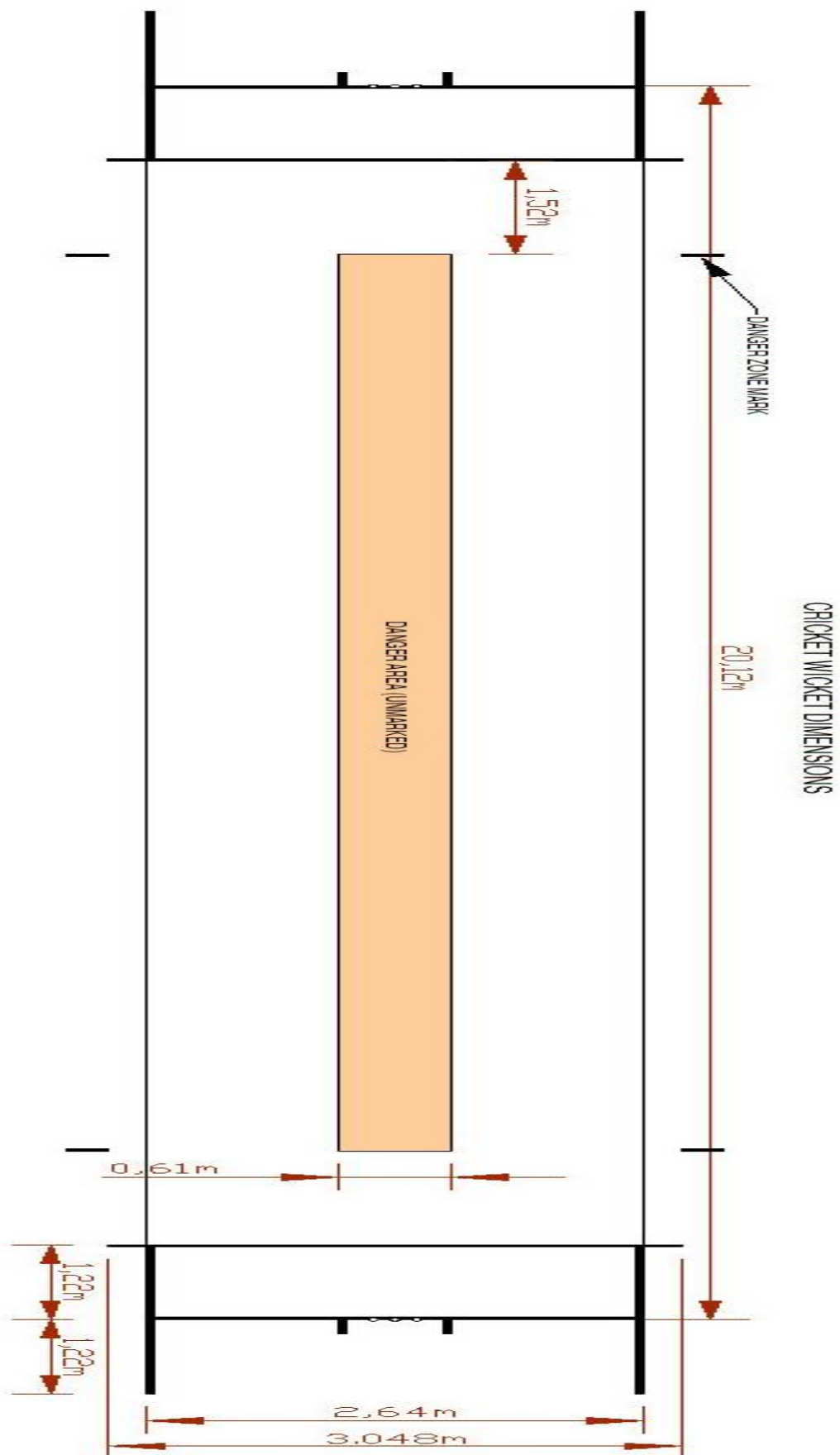


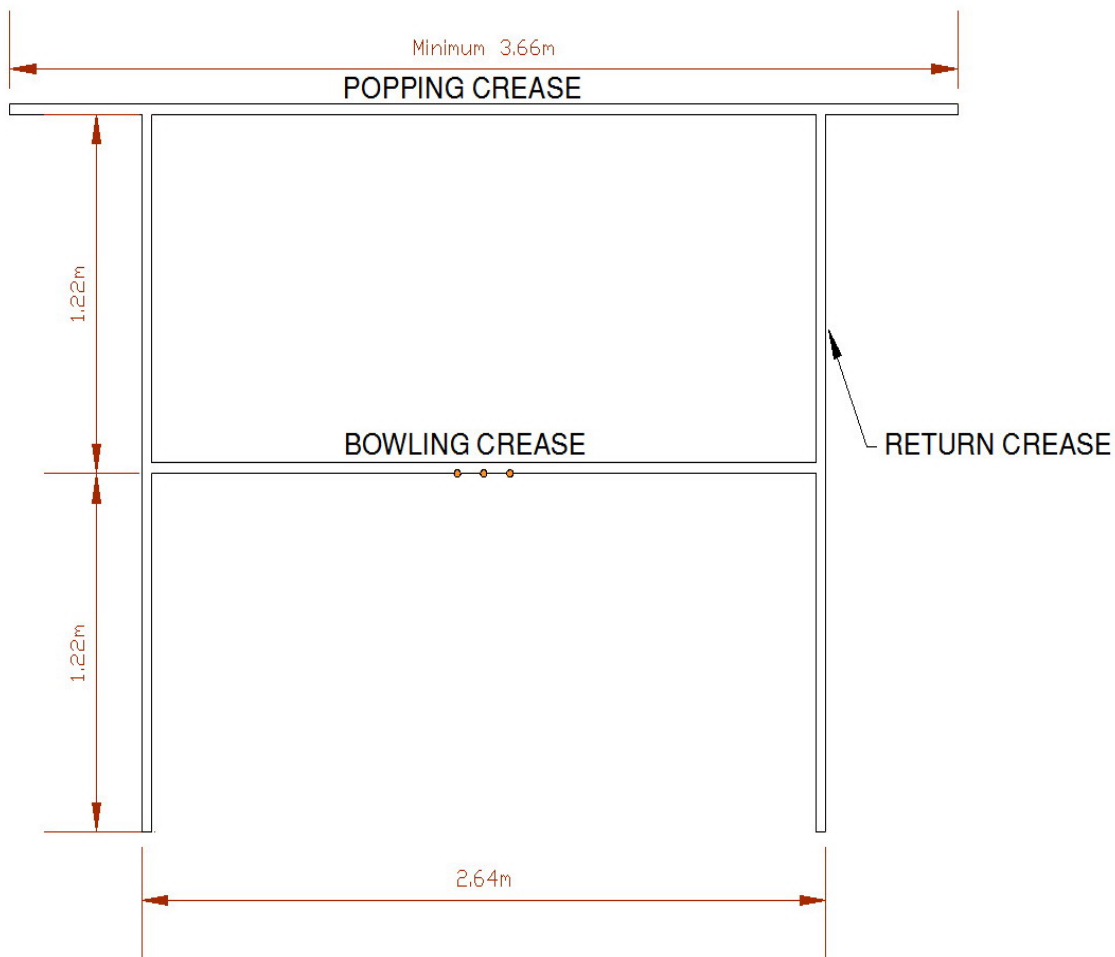
22.86 cm



71.1 cm







The end of the pitch

This is the back edge of the bowling crease. The stumps should be put in on this edge so half the stump is forward of the edge and the other half is behind the edge.

On the line is out

The back edge of the popping crease is the exact spot that determines if the batsman is in or out, or if it is a no ball. So if a bowler has his foot on the line and no part his foot is behind the line then it is a no ball. Or if the batsman has his bat on the line then he will be judged out.

The danger zone

This is an imaginary area in the middle of the pitch. It is defined by two small marks at both end of the pitch one foot either side of the middle stump. This shows the width of the danger zone. There are two other markings five foot forward of the popping crease on either side of the pitch. These show the length of the danger zone. It is important to mark these in as players are not allowed in this area. The umpires used these small lines to define the danger zone.

AFTER PLAY REPAIR

After play you will be looking at doing one of two things.

1. Rest the pitch
2. Repair the pitch for next weekend

The two require similar actions.

Rest the pitch

- Leave the pitch for a day or two to crack open after the game. This allows air into the profile for the roots
- Monday broom the pitch with a stiff broom. This removes the grass clippings and any other debris off the pitch
- Place dried clay soil into the bowling and batting holes and then roll the pitch to level these out
- Deep water the pitch
- You may also wish to fertilize the pitch before watering
- If you have bare areas you may wish to oversow with Ryegrass seed.
- If you have a couch grass pitch you may wish to sprig the bare areas
- Let the grass grow back to 10 millimeters and continue to cut and water the turf to encourage growth

Repair the pitch for next weekend

- On Sunday or Monday broom the pitch with a stiff broom to remove any grass clippings
- Place dried clay soil into the bowling and batting holes and then roll the pitch to level these out
- Deep water the pitch
- After the pitch has taken the water you can then roll the pitch when it is a suitable state. The pitch will not take as much work to prepare the second week as the work done in the previous week will have assisted in the preparation.



Wheel barrow, sieve and clay wicket soil



Foot holes repaired after play

PITCH SELECTION AND ROTATION

An important consideration is which pitch to use, and when to move to a new pitch.
The following points will guide you.

The first pitch should be on the high end of the wicket table

All wicket tables should have a slope so excess water can be removed from the table and not just sit there. In Melbourne and around Victoria at the start of the cricket season the weather can be indifferent, so often October and into November the wicket table and outfield can be damp. This is why it is important to use the high pitch first, as any water will run off this and be moving across the other pitches and the outfield. So this pitch will be the first to dry. Also it will be higher than the outfield.

How long should you use a pitch for?

Pitch rotation allows a used pitch to recover and then be played on again later in the season. How often you rotate pitches will depend on a few things like how many wickets you have on the table, how many games are played, and manpower available.

You should ideally use a pitch for one to two games (two to four weeks, except possibly early on in the season - see below). More use than this will lead to excessive wear, a poor pitch and a slow recovery.

The first pitch

Because of the cooler weather conditions in Melbourne at the start of the season it is usually best to prepare a Perennial Ryegrass pitch, as stated on the high end of the table (Pitch 1 - see page 38) In warmer country regions of Victoria, like Mildura, you will most likely have all couch grass on the wicket table, so you will be able to prepare couch pitches all season. Try to use this pitch for about four weeks, possibly even a touch longer if you have a game washed out. This will allow the grass on the rest of the wicket table to thicken up and the grass root system to improve. Also fielders will only be damaging other pitches on one side of the pitch in use as the other side of the pitch the fielders will be on the outfield. This should leave less wear on the wicket table than if you were on the middle pitch

The second pitch

You can then move to the other side of the wicket table to pitch 5 as seen in page 38 . This may also be Ryegrass and should hold up well at this time of year. Use this pitch for a game or two.

Repairing the ryegrass pitches

Once the Ryegrass pitches have been used they will be in need of repair if you plan to use them again. And you should use them again during the season.

You have several options here.

- 1** Over sow the pitch with ryegrass. This involves a light scarifying, light topdressing and seeding.
- 2** Sprig with couch. This involves spraying out the ryegrass, scarifying the pitch, putting down the sprigs and lightly topdressing with clay wicket soil. You should also have a growth cloth over this to encourage growth and stop the sprigs from drying out.
- 3** Let the couch grow through. If you have some couch in the pitch you may wish to let the couch grow and cover the pitch.

This may take some time depending on how much couch you have, the weather conditions, wear, competition from ryegrass, and other influences. You may wish to spray out the ryegrass. There are several herbicides that will kill out the ryegrass and not the couch. Then fertilise and water the couch.

4 Sod the pitch. This involves spraying out the pitch, scarifying the pitch, laying the washed sod and rolling it in. This is a good option however more expensive. It is sometimes difficult to get a good quality pitch on sodded wickets especially when they have not had adequate time to develop a deep root system.

With all these options you should use a fertiliser at recommended rates, and water the pitch not allowing the seed, sprigs or sod to dry out.

The couch pitches

By mid to late November the couch grass pitches should be in good condition and ready for play. These are more heat tolerant, will hold together better, can creep to recover from wear, and will wear better in hot conditions. Do not let the couch pitches get too spongy (thatch) as this will lead to slow pitches. You should lightly scarify these pitches at times during the season to reduce thatch. If sodding with standard washed sods scarifying will help the sod joins knit together and the joins will not be as visible. Move to a new pitch every game or two.

Don't prepare the pitch next to the one currently in play

With running between the wickets the batsmen will do some damage to the adjacent pitches. It is for this reason that you need to prepare a new pitch away from the one currently in use.

A suggested pitch rotation would be

Use pitch 1 then 5, 2, 4, 1, 3, 5, and so on depending on how many games you have.

Finals pitches should be in the middle of the wicket table

It is best to have big games like finals or a test match in the middle of your wicket table. This is usually in the middle of your oval so the boundary is equal distance from the pitch.

Wicket tables sizes

Wicket tables will vary; some may only have two pitches while others may have 10 or 12 pitches. Obviously this will have an effect on you pitch rotation, however if you keep in mind what is mentioned above you should have an effective outcome.



**Laying couch grass sod
3 meters wide**



**Notice the thin cover of couch
and it is rolled into the clay**

1	2	3	4	5
Ryegrass	Couch	Couch	Couch	Ryegrass



**Five pitches on the wicket table.
The left one with the roller on it, is Ryegrass and the other four are couch.
The white arrows mark the edge of each pitch.**

WINTER MAINTENANCE

This is a crucial and often overlooked activity. It can make a big difference to the state of the wicket table at the end of the football season. Winter maintenance should involve a number of tasks to assist you in having a relatively dry, level, and grassed wicket table at the end of football season.

Some of these winter tasks may include:

1. **Cross rolling the wicket table.** This is done to level out any small indentations made from football boots and stop water from sitting on the surface. Rolling is done in the opposite direction to the pitch as this will help level any undulations created during the cricket season. Be sure to do this when the pitch is in a suitable state, not too wet as it will cause damage, and not too dry as this will have little effect on regaining levels.
2. **Covering the pitch where possible.** Some schools and major facilities have the resources to cover the whole wicket table if there is rain. This allows you to reduce large amounts of water on the area and reduce damage.
3. **Rope off the wicket table.** Where possible try to keep people off the table. This will reduce wear and damage. Footballers may be able to train on other parts of the oval and casual users of the oval have plenty of space without going onto what may be a wet and sticky surface.
4. **Not too soft, not too hard.** If you are also looking after the oval in the winter and football is played on the oval then you don't want the wicket table too hard as someone may get injured. Also you don't want it too soft or again someone may get injured slipping over, and it will damage the turf and surface levels. So you need to have a little give in the surface. Getting this right will protect your wicket table and allow for a good game of football.
5. **Cut the grass.** You can cut the wicket table higher than you do in cricket season as longer turf will protect the table. Cutting the turf will stimulate growth and improve the visual appearance.
6. **Fertilise the turf.** Light rates of fertiliser will stimulate growth and plant recovery. Do not over fertilise as this will create too much growth and a week plant as well as thatch which is not desirable. Couch grass will not require winter fertilizing in the winter as it is dormant (not actively growing as it is too cold).
7. **Keep grass on the oval.** If you have a poor grass cover on the oval then the soil will be exposed. This will allow sand or soil to be easily transported onto the wicket table via football boots and the clay will be contaminated. So a full cover of turf is good for football and will help protect the pitch area.
8. **Wicket table fall.** Wickets used to be constructed dead flat, but the modern approach is to create a surface fall to allow runoff of excessive rainfall. The surface fall needs to fit in with the outfield levels so each case is different, but aim for a fall greater than 1% (1:80, or 1.25%, is ideal)

If there is no winter sport you are very lucky. The wicket table will have little to no damage and you will be in a good position to prepare pitches at the start of the season. You may even be able to prepare a pitch for preseason games.

RENOVATION

Renovation is an important task that is often overlooked at the local club level. If you don't renovate you risk having a poor wicket table and this may result in bad pitches for the whole season.

Why renovate? It's a good question that players and club members often cannot understand, or don't want to understand. Turf managers / curators are aware of the benefits of renovation. Renovation sets the turf back in the short term, however the real problems will show up in the longer term if you don't renovate. The surface levels will most likely be out after winter, grass cover may be thin, weeds may be invading the turf, foreign soil and debris will have made its way onto the table, and these all need to be rectified before the season starts.

Steps in renovating a cricket wicket table are as follows:

1. Roll the wicket table in several directions to get the area as flat as possible
2. Define the wicket table using paint
3. Cut the grass down low
4. Scarify the area in numerous directions (four to six) to remove all the debris. You may finish with little or no turf cover after this
5. Remove all the debris from the scarifying using a rotary mower or vacuum
6. Bring in a compatible clay soil and top dress the area using level lawns or a laser level
7. Seed the area (this may be one or two pitches or the whole wicket table depending on your requirements) using a quality turf type fine leaf Perennial Ryegrass at appropriate rates. Sow at 6 to 8 kg per 100 sm. Keep moist until at the second leaf stage
8. If sodding the scarifying should have removed all the turf cover. You don't want any organic matter left on the surface. Lay the washed sod ensuring all the joins on the sods are pushed together tightly and there are no gaps. Do not allow the sod to dry out until it is rooted down. Scarifying and light top dressing will reduce cracking along the turf joins
9. Roll the seed or the sod into the surface to allow good contact with the soil using a hand held roller, possibly a motor driven roller for the sod depending on the softness of the surface
10. Fertilise at appropriate rates using a turf starter fertiliser
11. Water the wicket table. This is an important task, do not let the seed or sod dry out

The following pages explain how to do each of these tasks.

1 Roll the wicket table in several directions to get the area as flat as possible

After football season there will be undulations in the surface due to football boots running over a wet soft surface. These need to be removed through rolling. It will be near impossible to get the area dead flat however if the soil is in a pliable state you should be able to take out most of the major undulations and less topdressing will be required.

2 Define the wicket table using paint

You may have the four corners of your wicket table marked with stakes in the ground. If not find the corners. Run a string line between these and place white paint dots along this to define the area to be renovated.

3 Cut the grass down low

You need to be cruel to be kind here. If debris is on the surface we need to get down to it to remove it. So set your rotary mower down low, as low as you can without hitting the soil. This may be as low as a few millimeters.



Scarify the area in numerous directions (four to six) to remove all the debris

Again, you need to be cruel to be kind here. You may finish with little or no turf cover after scarifying. How many directions you scarify will depend on the damage to the surface and how much debris is on the wicket table. Scarifying is also known as vertical mowing. Blades cut into the surface and remove grass and debris, leaving groves. These groves are important as it gives the topdressing clay a chance to key in, instead of having layering. If you do not scarify and just top dress you will get layering. This is two layers of clay in the profile and organic matter in between.

When you try to prepare a pitch it will break apart at the organic layer and this will create a dangerous pitch. If you top dress onto a flat clay surface with no groves then the two layers may come apart when the profile dries out during pitch preparation. So you need to remove all most organic matter and create groves for the clay to key into.



**A core sample of a pitch with thatch = slow pitch.
About 30 millimetres of thatch - far too much!**



**A good pitch with only a few millimetres thatch.
Minimal thatch with the thin grass cover rolled in.**

4 Remove all the debris from the scarifying using a rotary mower or vacuum

Each time you scarify in a direction you need to remove all the organic matter and loose soil. This is best done with a rotary mower. Have it on a low setting and the spinning of the blades creates a vacuum which picks up grass, soil and any debris. You may wish to use a strong industrial vacuum. Some people use a tractor mounted broom and this can be successful in removing debris. Be sure if you are doing this the tractor is not damaging the wicket table by making indentations on the surface.



5 Bring in a compatible clay soil and top dress the area using level lawns or a laser level

It is essential to use the same soil or a similar soil, tested to be compatible. There are different types of clay soils available. The soil needs to be able to join together when top dressing and if you are not using the identical soil you should get it tested to be sure you will not get layering. If damage to the wicket table is not severe you can allow for about $\frac{1}{2}$ a cubic meter of crushed clay soil per wicket when topdressing. This may be leveled using a level lawn, a rake, a large screed, or ideally hire in a laser level guided grader if your surface levels are close to the requirement. If laser leveling do not use large amounts of soil when topdressing, and work with your current levels and fall.

The size of the clay particles need to be mostly around the 2 to 4 millimeters in diameter. Years ago the clay was delivered in large clumps onto the wicket table and it was up to the grounds man to break this down. Not an easy task if it was wet! It is not considered good practice to crush the clay into fine particles like powder as the soil loses structure.

If you still have large undulations and low spots after rolling and scarifying, you will need to put down a lot of soil when topdressing and this is far from ideal. This will lead to a higher wicket table, possible layering, increased soil costs and when the soil is compacted possibly an uneven surface. So ensure your table is as flat as possible before scarifying. Some curators use string lines across the wicket table to assist them finding the low spots on the table. Be sure to have your wicket table on a fall so excess water will run off the table.



Laying washed sod- large sod, 1 metre wide and 25 metres long



Ryegrass germinating in the clay



6 Seed the area using a quality turf type fine leaf Perennial Ryegrass at appropriate rates

Once your levels are in order it is time to establish a turf cover. This would ideally take numerous months. Unfortunately there is limited time between the end of football season and the start of cricket season and this task of seeding is a big challenge. You may wish to sow the whole wicket table or only one or two pitches depending on if you are having some couch pitches or all ryegrass pitches. Choose a latest variety/cultivar turf type Perennial Ryegrass (see suppliers listed in page 53 and 54). Use recommended rates of 6 to 8 kilograms per 100 square meters. Evenly spread the seed over the required area ensuring seed does not land on other areas, like the couch pitches if you have sodded them. The seed can be spread with a walk behind spreader or by hand as long as it is distributed evenly.



Newly seeded rye grass pitch with couch sod on the rest of the wicket table

7 If sodding, the scarifying should have removed all the turf cover and lay the sod directly onto the clean clay soil

You don't want any organic matter left on the surface. After scarifying you may need to top dress to regain surface levels. Lay the washed sod onto the pitch ensuring all the joins on the sods are pushed together tightly and there are no gaps. You may wish to put finely crushed clay on between these gaps, and possibly top dress the newly sodded pitch. Place the clay on concrete and use the heavy roller to finely crush it. The soil needs to be firm so you do not damage your surface levels. If it is too wet or soft wait until it is firm. It is a good idea to use large boards about one to two square meters and about 10 millimeters thick. Place these boards over the sod you have already laid as this helps keep your levels, it pushes the sod into the surface and gives you a nice finish.

8 Sprigging

This is not recommended in the Melbourne area on cricket pitches in September (renovation time). The weather is not warm enough meaning it will take quite a while to establish on the wickets and with traffic on these areas they may kick out the sprigs or they will get damaged when wet. It may be done on ovals at this time, however it is best to have no play on the oval while the turf is establishing. See topic 10 on sprigging pitches.

Seeded couch may have a roll here as the quality of the seeds couches has improved in recent years. Some ovals have been established using seed couch and this has been successful. Remember they are a warm season grass so the time of year you sow is important. They will not establish as quickly as ryegrass. Princess and Riviera are two popular varieties.



Sprigging bare areas on the pitch in November with couch grass



Note the shade cloth to assist with establishment

9 Roll the seed or the sod into the surface

This allows good contact with the soil. Use a hand held roller for the seed. Use a hand held roller or possibly a motor driven roller for the sod depending on the softness of the surface. The soil needs to be pliable to be able to push the roots and stems into the soil but not too soft as this will disrupt your levels. Make sure your soil is not moist when rolling seed in as if clay is wet it will stick to the roller. The rolling gives seed or sod good contact with the soil and reduces the chance of the seed or sod drying out.



Fertilising the wicket table after renovation



Rolling the seed into the soil

10 Fertilise at appropriate rates using a turf starter fertiliser

A turf starter fertiliser will contain similar amounts of nitrogen, phosphorous, and potassium (N:P:K). This will assist the new seed or turf to establish and grow. Use recommended rates on the bag. Once your turf is established you need to continue to fertilise to assist the turf with growth and grass recovery after wear. Be careful not to put too much fertiliser on as it will lead to lush growth and a weak plant as well as thatch which is undesirable on a cricket pitch. A maintenance fertiliser could be applied every month at a rate of 0.1 kilograms of actual nitrogen per 100 square metres. The ratio of nitrogen to phosphorous, and potassium is 10:1:8. Note the reduced amount of phosphorous as this is only required in smaller quantities on turf once the grass is established. An example is if you use a turf fertiliser with an N:P:K ratio of 20:1:16 then you have 20% nitrogen. So $0.1 \text{ (rate)} \times 100 \text{ (area)} \div 20 \text{ (nitrogen)} = 0.5$ kilograms of fertiliser is required every 100 square meters. If your wicket table is 375 square meters (15 by 25 meters) then you would need 1.875 kilograms of fertiliser to be spread evenly over the wicket table if going at this rate.

Remember once the season has started you may have one or two pitches being prepared and you would not fertilise these when they are being prepared so you would have to adjust your amount of fertiliser depending on how many pitches you wish to feed. This should be applied each month. Do not apply fertiliser to couch when it is in dormancy as it will not be actively growing so it will not take up the fertiliser, however weeds would benefit from this application and we don't want these.



Water the wicket table

This is an important task as the seed needs water to germinate and grow and the sod has no root system so it will dry out very quickly. You need to water lightly and frequently at this stage. If the seed or turf dries out they will die. On very hot days you may need to apply small amounts of water to the seed as many as six times per day to stop it drying out. A good idea is to put down shade cloth on the newly establishing area as this keeps the moisture and heat in. Once the turf is established it is recommended to water less frequently and to depth as this encourages a deep root system and a resilient turf grass.



Shade cloth allowing rapid turf recovery or germination of newly planted seed

If there is no winter sport you are very lucky

Some ovals only have cricket played on them and are lucky not to have any winter sport. A few ovals have the cricket wicket table in the middle of the oval and soccer pitches or other sports played on either side of the table. This is a real advantage as there is little or no wear on the table and the surface will be in much better shape coming into the cricket season. If this is the case you probably don't have to renovate the wicket table as there will be no debris on the pitches. It should have a nice turf cover and the levels should be good. This will possibly allow you to prepare pitches for pre season games if weather permits.

Oval renovation

Oval renovation is also required after winter sport as there will be damage to the turf cover and surface levels on the oval. Neglecting to do this will lead to a surface that is not level and possibly a dangerous surface. Our aim is to have a smooth surface with even turf cover. This will enable the cricket ball to roll smoothly across the infield and outfield so the fielders can confidently bend down to pick up the ball and not get injured. Also any bare areas on the oval will have the soil exposed and during cricket season this soil may get transported onto the wicket table contaminating the clay soil.

Top dressing and seeding the oval will achieve a smooth surface and turf cover. If it is a couch oval then leveling low areas and sodding them is the best option.

Be sure not to get any of the soil used to top dress the oval on the wicket table or the wicket table will be contaminated.

GRASS TYPES

Turf grasses are broken up into two main categories, warm season (C4) e.g. Couch and cool season (C3) grasses e.g. Ryegrass.

Cool season grasses

These perform well in a temperate climate and the ideal temperature range is between around 15 to 22 degrees Celsius.

Perennial Ryegrass *Lolium perenne* is a C3 grass and is the best of the cool season grasses for cricket pitches. It is quick germinating, has quite good wear tolerance, a dark green colour and is visually pleasing. On the down side it does not like to be cut too low, has poor recovery if there are bare areas as it can not creep, it has poor heat and drought tolerance, and it retains its green colour on cricket pitches.

If you are buying Perennial Ryegrass seed choose a latest variety/cultivar turf type Perennial Ryegrass. There is a lot of trial work done and these results are easy to look up on the internet to find out which cultivars are the better performing ones. One such recent trial conducted in Melbourne was the ANTEP trial and these results can be found at the Australian Seed Federation website at - www.asf.asn.au . Click on the News and Information icon and look at the final report of ANTEP 4. There is a lot of information here to assist you in choosing quality seed. Otherwise you could ask a turf seed supplier, listed page 53 and 54, which one they recommend. If you just ask for Ryegrass seed you may get pasture seed or Annual Ryegrass seed which is not suitable for cricket pitches. So ask for turf type seed or better still select a cultivar and order that one. For example Perennial Ryegrass cultivar SR4600 is one listed in this trial.



Individual Perennial Ryegrass plant



Perennial Ryegrass oval
- great looking surface

Perennial Ryegrass features

- It is generally purplish at the base of the stems
- Leaves are shiny on the back
- Leaves dull on the front with veins showing
- Erect growing grass, can become clumpy

Warm season grasses

These are suited to sub-tropical climates and perform well in temperatures between 25 to 32 degrees Celsius.

Couch Grass *Cynodon dactylon* is a C4 grass and is an excellent grass for cricket pitches as long as it is actively growing. Some added benefits of couch for pitch preparation when it is actively growing are it is a hard wearing grass that is heat and drought tolerant. It can handle high levels of salt in the soil, be closely mown as well as withstands rolling and has good recovery due to its capacity to creep by rhizomes and stolons. On the down side of couch it goes dormant when the temperature is too low.

Which couch grass variety to choose? That is a good question. I believe choose one that grows well in your area. In Queensland all couches grow well as it has ideal conditions. In Melbourne some couches do not perform as well in the cooler climate. Look at how different couches are going in you area or if you have time trial some selections or cultivars. You should choose an 'improved' variety with a good local track record.

There are numerous good ones out there. **Legend, Conquest, Grand Prix** are common couches, and the hybrid couch **Santa Ana** have all been used in Melbourne with success. Hybrid couch *Cynodon dactylon* X *Cynodon transvaalensis* is a cross between Common Couch and South African Couch and is a finer grass than most common couches. It is more dense and has a shorter dormancy however it usually produces more thatch than most common couches.

You can also purchase couch seed and the quality of these has improved in recent years. Princess and Riviera are two popular varieties.



Couch grass creeping across the surface

Couch Grass features

- Dark green color
- Will vary slightly in color depending on variety/cultivar
- Creeping habit
- Has above ground runners (stolons) and below ground runners (rhizomes).
- Drought tolerant
- Salt tolerant

The grass plays an important role in the turf pitch

The turf grass draws water from the soil profile through transpiration and this helps the pitch dry out deep in the profile. As mentioned in an earlier topic evaporation will only dry the pitch down to about 3 centimeters, it is the grass cover and its root system that takes moisture out of the soil profile deeper down and this helps create a harder pitch. So it is important to have a full cover of grass and a deep root system.

This full cover of grass helps hold the pitch together. If you had no grass cover it would crack open and where the cracks start they will dry out more than where there are no cracks. The cracks will be exposed to more evaporation and will crack open even more. So by having a full cover of grass the pitch will dry more evenly and not crack open as quickly or as much.

If the grass cover is not even and you have some parts of the pitch with grass and other sections of the pitch with no grass cover you will get areas of the pitch that are harder than other areas and that will mean an inconsistent pitch. This can be the case after football season and hence the need to renovate your wicket table.

Actively growing grass needs to be kept in mind when choosing grass types. That is why it is recommended the first few pitches of the season in Melbourne are perennial ryegrass as in October and into November this grass type should be actively growing and able to remove moisture from the profile. Couch will have good growing conditions from late November onwards in Melbourne depending on the season. So that is why it is the preferred grass from that time of the year onwards. If you are in a warmer climate like Mildura you could use couch all season as it will usually be out of dormancy and growing actively during October and November.

Couch is the preferred grass type for cricket pitches as it has a deeper root system and is more effective at drying the pitch to depth than Perennial Ryegrass is. However as mentioned it needs to be actively growing to achieve these benefits.



Note the size of the clay particles used for topdressing the pitch amongst the germinating Ryegrass

WICKET SOIL

Cricket pitches and their soils have specific requirements. These are much different to what is required on most other turf surfaces. Soils are made out of sand, silt and clay. A clay soil with grass cover is needed to create a flat hard cricket pitch. We roll the pitch and moisture stress the turf, all this is not in line with good turf management practices' however this is required to make turf pitches. Tennis courts are the only other turf surface that is managed in a similar way to cricket pitches.

The soil used in Australia on cricket pitches is of high clay content, it swells when wet and shrinks when dry. These clays usually have between 50% to 70 % clay particles. Clay particles are below 0.002 of a millimeter in size, or 2 microns.

Clay may be made up of Kaolinite, Illite or Smectite. It is the Smectite clay and the mineral in this called Montmorillonite that allows our clays to swell when wet and shrink when dry. This allows our wickets to be remolded. It also allows our pitches to crack and this is very important for turf recovery as the cracking allows oxygen down to the roots. In soils that do not crack oxygen is deficient and in pitches or turf surfaces where this occurs the turf does not recover well. Oxygen needs to be mechanically put back into these compacted profiles after rolling or traffic; however this is not needed in our cracking clays as they self aerate through cracking when dry. The quick and easiest test to look at how much the clay cracks is a cracking pattern test. **See photo below.**

Clay soils are required to get the pitch hard. Sand soils on the other hand do not mold together or aggregate into clumps or clods. They cannot produce a hard surface, however they do drain well, they have plenty of room for roots to grow and room for oxygen in the profile so roots can have access to oxygen. Soils need to be tested for their suitability for cricket pitches. These tests should be done at a suitable soil testing laboratory.

Some cricket clubs in country areas have used suitable clay soils found in their area. This can save considerable money if good clay is readily available and free. One cubic metre of crushed soil costs about \$200 and this is sometimes why clubs do not renovate after football season due to the cost.

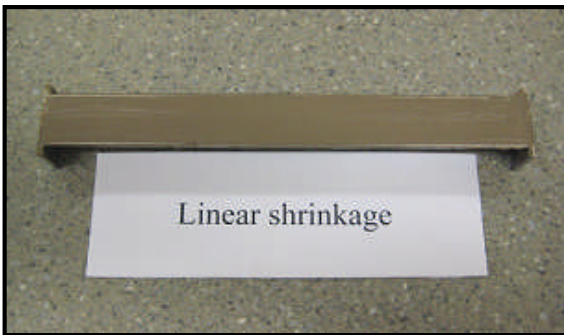
Some of the tests that could be undertaken are

- Particle size
- Cracking pattern
- Linear Shrinkage
- Crushing Strength

A full set of tests costs approximately \$350



Cracking pattern test



Shrinkage tests above - Linear shrinkage and Core shrinkage



Crushing strength balls test

Example of a Clay Sieve Analysis	Percent %
Gravel	1
Very coarse sand	2
Coarse sand	5
Medium sand	4
Fine sand	3
Very fine sand	4
Silt	26
Clay	55
Total	100

BUYERS GUIDE

Below is a list of suppliers, products and services to the turf industry. This list is aimed to help you find seed, soil and other products for your cricket pitches. **The companies listed do have other products and services available and can be contacted directly for further assistance.**

Service	Company		
Paint	Lawn & Turf Simplot Proline		
Drop in wickets	Strathayr		
Flag poles & Goal posts	Abel Sports		
Safety equipment	Active Safety		
Turf Covers	Advanced Seed		
Line Marking	K & B Adams Green Acres		
Irrigation	Victorian Irrigation Services Turf Care & Hire		
Chemicals	Bayer Environmental Science Nuturf Globe Aust.		
Wetting agents Water saving products	Globe Aust. K & B Adams Turf Nuturf	Biogreen Greenacres Anco	Oasis Turf Turf Culture Lilydale Instant Lawn
Machinery &/or Hire	Globe Aust. Evergreen Turf K & B Adams Turf	Sportsgrass Turf Care & Hire Hume Turf & Machinery	
CAD Surveying & Design	SportsTurf Consultants		
Research & Product Development	SportsTurf Consultants PGG Wrightson		
Tanks	Vic Irrigation Services Rhino Tanks		
Wicket Soil	Biogreen Hume Turf & Machinery		
Turf Systems	Strathayr Evergreen Turf		
Soil testing Laboratory services	Strathayr Endeavour Turf Products		Independent Turf Services Nuturf
Car parking on grass systems	Strathayr		
Construction/ Renovation	Turfcare & Hire Endeavour Turf Products Sportsgrass	HG Turf Hume Turf & Machinery Oasis	Strathayr Lawn & Turf K & B Adams Independent Turf Services
Seed	PGG Wrightson Turf Simplot HG TURF	Advanced Seed ANCO Oasis	Lawn & Turf Greenacres Heritage Seeds
Fertiliser / chemicals	Simplot Greenacres K&B Adams	HG Turf ANCO Oasis Turf	Turf Culture Biogreen Independent Turf Services
Instant Turf	Oasis Turf Greenacres ANCO	Strathayr Lillydale Instant Lawn HG Turf	

See following page for other services and contact details



Anthony Campbell
0418 335 364
www.strathayr.com.au



Ph: 03 9752 4133
www.kbadamsturf.com.au



Turf Care & Hire
03 5248 0000
www.turfcare.com.au



Mark Bennell
0418 550 911
www.vicirrigation.com.au



Cameron Henley
0418 880 633
www.pggwrightsonturf.com.au



Neville Treadwell
0413 943 450
www.simplotproline.com.au



Independent Turf Services
03 9460 5171
www.independentturf.com.au



Matthew Buck
0417 583 492
www.evergreen.com.au



Jim Marchbank
0418 395 756
www.sportsgrass.com.au



LILYDALE
INSTANT LAWN
Steve Cole
0432 328 731
www.lilydaleinstantlawn.com.au

Turf Culture

Warren Braybon
0413 587 682
www.turfculture.com.au



Michael Holohan
0438 700 119
www.globeaustralia.com.au



Daniel Copsey
03 9370 6078
www.hgturf.com.au



03 8555 0461
www.etpturf.com.au



Rick Henley
0412 042 726
rickhenley@bigpond.com



Active Safety Supplies
0418 108 609
activesafety1@optusnet.com.au



Graham Clifford
0408 143 911
www.biogreen.info



0418 566 102
malchatel@bigpond.com



Michael Ahearn
0408 877 016
www.adseed.com.au



03 9574 9066
www.sportsturf.com.au



Tim Coram
0418 170 285
timcoram@bigpond.com



0407 365 439
www.greenacresturf.com.au



Ph: 03 9328 1155
www.abelflagpoles-flags.com.au



Mick Green
0412 199 222
www.humeturf.com.au



Tim Elligate
0411 882 475
www.ancoturf.com.au



Matt Merrick
0413 442 811
www.heritage seeds.com.au



1800 631 008
www.nuturf.com.au



03 9248 6888
www.bayeres.com.au

FUSION HORTICULTURE

0408 016 331
www.fusionworkforce.com.au

FOUNTAINLINE

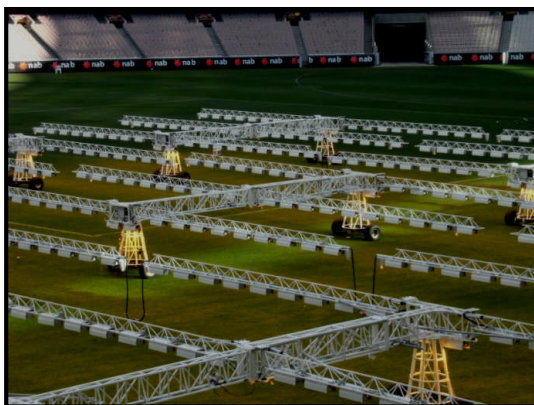
0416 054 557
www.fountainline.com.au

RHINO TANKS

1800 632 410
www.rhinotanks.com.au



CRICKET VICTORIA



PITCH PREPARATION ADVICE SERVICE

Cricket Victoria, in conjunction with Turf Grass Association Australia (Victoria) offer a free telephone advice service for anyone to help with basic pitch preparation. If you think you or your club would benefit from this, please contact TGAA Victoria and advice will be forthcoming to assist you with your enquiry.

Phone: 03 9791 6900
Fax: 03 9791 6055
Email: admin@tgaa.asn.au
Web: www.tgaa.asn.au

Our Association provides support and technical assistance for the turf industry to deliver environmentally sustainable surfaces for sport and recreation.

The Turf Grass Association Australia Inc. (TGAA) was formed in Melbourne after a meeting at the Melbourne Cricket Ground on November 22nd 1989. A steering committee was elected and the Aims and Objectives written and later ratified at the first Annual General Meeting in April 1990.

Thus the official TGAA was formed to give all turf managers and allied trades a single representative body. Up until this time sportsfield curators, racecourse managers, council workers, groundsmen and those connected with the industry such as chemical, fertiliser and irrigation personnel had only a small amount of input into how the sportsturf industry was organized.

The formation of the TGAA meant that everyone associated with the industry, no matter how small had a say. Describing ourselves as a non-profit industry body totally funded by its members and through sponsorship, we represent turf practitioners and industry bodies Australia wide no matter their size.

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- ★ Ernst Gmehling - Ground Science
- ★ Sue Bailey – TGAA
- ★ Phil Ford

Courses and Seminars

- Cricket Victoria runs a half day basic pitch preparation course in mid September
- TAFE Institutes that teach Turf Management run courses that will assist curators
- TGAA runs an excellent seminar in Winter that is very popular and relevant

There are several notes, booklets and books written on cricket pitch preparation which may assist you in your knowledge and pitch preparation.

Some of these are listed below:

Cricket Wickets Science Verses Fiction

By Keith McIntyre and Don McIntyre

Published by Horticultural Engineering Consultancy (2001)

5 Brimage Place Kambah ACT 2902

This is an excellent book of around 280 pages and costs about \$65. It gives in depth details on a range of topics including preparation, wicket construction, soil selection etc, 14 chapters in all.



Sports Grounds and Turf Wickets a Practical Guide

By Carl Liffman

Published by TAFE Publications Unit (1984)

37 Langridge Street Collingwood 3066

This is a general turf grass book covering a range of topics including weeds, diseases, grass types and also wicket preparation. It may be hard to purchase a copy and if this is the case you may have some luck at libraries or do a search on line.