

Mechanical maintenance of bowling greens

By Robert Chesham



A single cylinder roller can accentuate contours. This photo was taken at a Bowls club in Shrewsbury, England.

The mechanical maintenance of a bowling green can never be an exact science. Because we work so much with the weather and varying soil conditions, what works on one bowling green will not necessarily be successful on another.

Let's follow the bowling green year from early spring to autumn renovation work. Much of what is done on a bowling green in England will apply to fine sports turf management elsewhere. And while there are over 3000 bowling greens in England, most will be surprised to know there are about managed 100 bowling greens in the USA.

Bowlers are amongst the keenest and most critical users of fine turf. Regular maintenance using effective, reliable, machinery gives them a green on which they can play their best.

Late winter/early spring

It is essential, when there is a little woolly growth on the bowling green, to keep it well mown. It should never be cut down to bowling height but should always be topped off. This will help to keep at bay some of the diseases that may occur in the grass.

At this time it is a good thing to use a six-foot drag brush, probably once or twice a week, to brush the green so that the blades of grass are actually swept. This stops moisture forming on the grass and will help to keep away diseases. We can

never eradicate diseases such as fusarium, but we can minimize them.

As we approach the start of the bowling season, brushing should be done more often prior to mowing. The drag brush will not only remove the dew particles from the leaf of the grass, it will also spread any worm casts that may be on the green and will lift the grasses to a certain extent, so that the mower will give a nice even, level cut. Alternatively a hand drag-mat can be used for the same purpose.

Depending on weather conditions, but normally in early April, an application of lawn sand should be applied to the bowling green. This will kill any moss that has occurred during the winter period. About two weeks after the application, when the moss on the bowling green has blackened off, use a dethatcher such as a Rotorake fitted with thatch removal reel to remove the moss. Normally two or three passes is sufficient. Remember we will be bowling in four-five weeks time so we must not hit it too hard but must still try to get as much moss out as possible.

At this time of year it doesn't really matter in which direction we scarify but if we intend to do two or three passes the first pass will go in whatever direction is thought necessary; this can then be referred to as the 12 o'clock position. The second run should be at a shallow diagonal. Think of a clock face, the first run was 12 o'clock, the second run 1 o'clock. If we need a third

run we can put that in at 11 o'clock. After scarification with the thatch removal reels, fit the brush reel and go over the green once more. This will pick up any debris that has been left behind. The next operation is to cut the green, again not quite down to bowling green height, as we are still several weeks away from start of play.

During the winter and into early spring we should spike the green fairly regularly, again depending on weather conditions, using slit tines. Slit tines are the best to use in the closed season to give maximum aeration. As the bowling season approaches we will then turn to the round solid tine to continue our aeration program. A round solid tine, especially the 7mm diameter pencil tine will give far less disturbance to the green or the run of the wood, whilst still allowing air, nutrients and water to reach the roots of the grass plant.

Spring

As we come out of the winter period into spring, any areas which are a little thin can be roughed up, using a hand rake, and lightly spiked using a hand fork with solid tines, before putting down a little seed covered with a thin layer of top dressing.

Scars left from fusarium, generally speaking, will grow through. If they are really bad, again they could do with a little bit of localized seeding and repair work. This can be done using hand tools and the Aerdrain fork to spike the areas. It is essential, however, before any work is done to fusarium patches to make sure the fusarium is dead. Otherwise it can spread across the green.

It is also a good idea to use a hand roller or powered roller, to gradually correct undulations or movement which may have occurred in the bowling green due to frost and adverse weather conditions. The first couple of rolls should be done in different directions. Again it is a good thing to think of a clock face. First we run at 12 o'clock, a second run maybe at 2 o'clock and a third at 9 o'clock so we cover the whole of the bowling green at various angles and gently push it down to create a truer, level surface.

About a week to 10 days before the start of the season drop the mower down to bowling height and start to mow on a regular basis.

Generally speaking bowling greens are mowed corner to corner. This is so that the woods will not pick up the line of the mower. It is often a good thing to vary this line of cut if possible. Instead of going corner to corner go from one corner to half way along the first rink to the right of the corner, the next time half way along to the left, so we are not quite on a corner to corner basis. If we vary these mowing directions we are less likely to get tracking from the mower, if the green is a little bit soft, especially at the start of the season. Think of that clock face again - 12 o'clock first cut, 11 second cut, 1 third cut.

The bowling season

As the bowling season progresses we need to dethatch lightly, again using a Rotorake, this time fitted with the thatch control reel. The thatch control reel has very thin blades with a quarter-inch spacing across the width of the machine. This allows a very light verticutting action to either cut off or stand up any laterally growing or coarse grasses.

Ideally this thatch control job should be done every 10 to 14 days throughout the bowling season, always followed with the mower. As this operation is carried out during the bowling season, it is very important to get the direction of travel correct. We do not want to dethatch straight up and down rinks or straight across as this will affect the run of the wood. The best way to work with the thatch control reel is to start off at say the bottom right hand corner of the green and aim for a position half way across the top of the green so that the direction of the dethatching is off the direction of the woods and is off the direction of the mowing.

As we progress through the summer and the bowling season, the aerator should be fitted with round solid tines. The 7mm pencil tines are probably even better for summer use. By spiking with these tines we allow water and nutrients to be taken to the

base of the grass plant rather than to sit in the thatch layer on the top of the green.

Also during the summer, as conditions get drier we can make use of a spiker slitler. The spiker slitler is used to put small surface slits into the green, probably no deeper than a half inch. This allows water to go through the thatch layer to the root of the plant.

No bowling green is ever flat; it always has slight undulations. As the weather conditions dry out and we use the watering system, the water tends to run off the high spots on to the low spots. The high spots thus become drier, the low spots obviously become wetter and the difference in height is accentuated so our bowling green becomes even more uneven. By using the spiker slitler at least once or, preferably twice a week, in various directions, we can make the bowling green absorb and dissipate water at a uniform rate.

Whenever you fertilize the green or apply a wetting agent, run the spiker slitler over first so that the nutrient is again taken towards the root of the plant.

During the bowling season, we will have areas, especially on flat rink greens, that tend to wear. It is far better to treat this wear as it appears rather than leave it to the end of the season.

Small worn areas can be roughed up

using a hand rake. We can then put down a little seed, cover with a light top dressing, rub in, so we will get some growth to the repair and not such a badly worn spot.

Throughout the summer make use of the Trulevel or Eroll rollers. Depending on climatic conditions the green can be rolled, probably about once a fortnight or prior to important competitions, just to true and speed up the green.

It is essential before any work is done to fusarium patches to make sure the fusarium is dead.

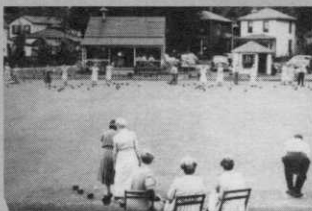
Autumn renovation

After a good season of bowling and after the prize-giving and final dinner, it is time to start the annual renovation. One of the main problems these days, is that bowlers wish to bowl later and later into the autumn; some clubs not finishing until early October. It is always best to stop as early as possible to get the remedial maintenance program under way.

The first job is to dethatch the green. Fit new blades so that they will take out the maximum amount of debris.

Cut the green to bowling height and then start to dethatch. Do not work too deeply. The blades should go through the thatch and just mark the top of the soil layer. It is far more effective to do several runs rather than

A BIT OF HISTORY



It is believed that lawn bowling dates back to Egyptian times, but it may have originated in France, to be taken to England by the conquering Normans in 1066. Other think that it may stem from a game played by roman soldiers using stones. Over a period of time the stones became balls and were rolled rather than thrown.

Bowling became so popular in England that King Edward the III banned it in 1361 because it was interfering with compulsory archery practice. In the reign of Queen Victoria in the late 19th century, all prohibitions on lawn bowling were lifted and became very popular with all classes. Bowlers were considered to be up-right, moral people and were respected.

It is recorded that Williamsburg, VA had a bowling green in 1632 with another being built in what is now Bowling Green, VA. After the Revolution it lost popularity but was re-introduced to America around 1876. The American Lawn Bowls Association was founded in 1915.

one deep pass that may cut out the roots, etc. Again, first run at 12 o'clock, second run at 11 o'clock, third run at 1 o'clock so we have, in fact, covered the whole area of the bowling green three times.

Most of the debris will be picked up by the grass box on the Rotorake. Any which has been dropped on the ends can be picked up by hand. In my experience the majority of bowling greens will need to be dethatched again. So probably we would put in at least another two runs or, even another three runs, to really clear off every bit of debris and rubbish from the surface of the green.

Once this has been achieved we then fit the brush reel to the rake and run the machine over again to clean up any debris left behind.

When a reputable top-dressing has been decided upon, stick to it for at least five years. Don't chop and change. One top-dressing will not necessarily be compatible with another.

If we have decided to hollow tine the green, now is the time to do it. Normal depth for hollow tining a bowling green would probably be four inches with a pattern of 3 x 3 or 4 x 4 depending on the machine used. Once this coring has taken place, the cores need to be removed from the green. There are various methods of picking them up and it is essential.

Many questions are asked about how often we should hollow tine a bowling green. It is becoming more and more necessary. In some cases now, where heavy usage occurs, it needs to be done every year but, in the majority of cases, probably every second year. Once we have hollow tined, if there are any parts that have taken extra wear, or the odd corner that we cannot get to with the big machines, then take the hand fork, fitted with hollow tines, and do these parts by hand.

Now is the time to overseed. Again this is something that really ought to be done every year. We don't have to put down vast quantities of seed, just enough

so that the green has got some rejuvenation properties. Take advice from a good seed merchant to obtain a mix of seed suitable for the soil types and weather conditions in your area.

Once the seed has been put down, top dress. Whatever type of top-dressing is used, it should be spread evenly over the green at the required rate. After spreading the top dressing, if possible, let it dry for 30 or 60 minutes in the wind. Once it has dried, it is much easier to rub in using a drag mat or brush, to fill all the holes we have made with the hollow tines.

It is essential that top-dressing is rubbed right in to the base of the grass sward and into the holes, so the tedious job of drag brushing/matting has to be done in several different directions. It must be done properly to achieve maximum benefit.

If the bowling green is not to be hollow tined this year, then it ought to be slit tined. This should be done in at least two different directions, preferably three, again working on the clock principle. Once the bowling green has been slit wide open, we put on the top dressing. Obviously we do not need as much top dressing when we have slit-tined the green as when we hollow tine.

There are many makes of top dressing available on the market and the choice for the individual club has to be made depending on cost, quality, etc.

When purchasing top-dressing, ask your dealer what it contains: ask about particle size of the sand used and pH value. Most dealers will give a sample for testing. If they won't, then go elsewhere. When a reputable top-dressing has been decided upon, stick to it for at least five years. Don't chop and change. One type of top-dressing will not necessarily be compatible with another. The biggest problem is variation of sand particle shape and size. Consult your Turf Advisor.

Autumn/winter

Once the green is 'put to bed,' leave it alone for a few weeks, just keeping an eye on it to make sure we don't get any fungal attacks, checking it about twice a week.

The grass will gradually come back through the top dressing so that we will

have to get the mower out again and top off. We don't need to go down anywhere near bowling green height but we do need to keep it topped off at winter height.

About four to five weeks after renovation (depending on weather conditions), it is time to start our

Autumn/Winter slitting program with chisel ended slit tines. We would normally carry out this program on a two-week rotation right through the autumn and winter. The only time to stop this slitting is if the weather deteriorates badly and we have frost. Then it is best to leave the machine in the shed.

The slitting program can be followed through the winter and into early spring, to keep the bowling green open and allow oxygen to the roots.

if we get heavy rain then the green will be more able to withstand bad weather. The grass roots will have somewhere to grow and we will strengthen up our sward ready for next year's bowling season.

Deep slitting can be done again in November/December but should not be used after Christmas. The deep slits may be evident at the start of bowling. Do not

allow the grass to get too long and always be on the look out for disease.

If an outbreak of fusarium is spotted, treat immediately. Remember, in winter, when the grass is dormant, use a contact

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fungicide and in the growing season use a systemic fungicide.

Finally, remember that colorful flower beds, weed-free paths and trimmed hedges enhance the green and complete the bowlers' pleasure.

Author Robert Chesham has worked for SISIS, one of Europe's leading manufacturers of turf maintenance machinery, for 25 years and specializes in bowling green maintenance. Its US-subsiary company SISIS INC, is based at Clemson University in South Carolina.