

Elise Jarvenen, Past Chairman of the Finnish Greenkeepers Association, describes life working on golf courses in northern Europe.

● Breaking the ICE

Finland is known as "The Land of TheThousand Lakes" but has less than one hundred golf courses. Not quite all of them overlook lakes; some of them are on river banks or by the sea.

Finland is on the same latitude as Alaska, which means that the winters are severely cold and the ground freezes solidly.

The Finnish summer is light and very beautiful but always far too short. The length of the growing season is about two months shorter in the north than in the south. In the south one can play golf for up to eight months of the year and in

the north for about five. On average the playing season lasts six months and the maintenance season goes on for ten months. But even midwinter does not give the greenkeeper a full holiday, as vigil watch against solid ice forming on the greens has to be kept and all changes in the snow structure must be duly observed.

Although the summer is short, the days are long and light. In the north this means three months of continuous daylight and in the south one and a half months. Just think what this means for the golf course grass! They grow "like crazy" and, accordingly, the teeing grounds and fairways have to be mown three times a week. The cost of maintaining a golf course in Finland is therefore quite high because of the large number of people hired to run the mowers.

Even in the spring the surface can remain soaked for a long period of time before the thaw sets in and the soil dries in earnest. Given the growing conditions we have in Finland the best results

You won't see many of these in the UK!



for obtaining high class greens of even quality are achieved by using creeping bent or annual meadow grass.

No doubt, we will have to wait for another couple of hundred years of flourishing greenhouse effects before we can expect bermuda grass to survive the Finnish winter. Even so, it is not always easy for the greenkeeper to explain to the most exacting players coming here from courses situated in a more southerly climate that bermuda grass simply does not survive and cannot grow in Finland no matter what you do.

A blend of meadow grass, chewings - and red fescues is used quite extensively for fairways, teeing grounds and rough areas.

Poa supina has also gained popularity for teeing grounds as it grows fast to cover divots and is able to



withstand our winter climate and a low cutting height extremely well. It is, however, too aggressive to be used on greens because of a far too fast growing rate in the prolonged daylight conditions of the Finnish summer.

How do we maintain the golf course in real winter conditions?

The very idea of maintaining a golf course in the middle of the winter sounds ridiculous but there are jobs that must be undertaken specifically because of the winter. Furthermore, there are tasks that, if completed during the winter season, will reduce work in the summer. This is vital as the summer is short and is the hectic season for both playing and maintenance when courses are packed with players and machinery all at the same time.

The arrival of winter escapes any

forecasting. No two years are the same. Normally the frost sets in in October-November upon which the soil freezes solid down to a depth of 0.5 - 1.5 metres and will remain so for four to six months. Usually the snow arrives a little later but most winters will see an all-covering and lasting carpet of snow before Christmas. Sometimes the first snow comes early, when the soil is still soft. If this initial snow cover is thick and stays on, the soil might not freeze at all during the winter.

This, however, might result in the emergence of snow mildew and other forms of winter fungi, especially so as the effects of the fungicides we use do not last for such a prolonged period of time. Ideally, the soil should be dry and frozen before the snow comes. A dry and thick layer of snow is good for the wintering of the grass sur-

faces, as this will protect the grass against the cold and prevent the soil from freezing too deep down. In the eastern and northern parts of Finland the snow layer usually builds up to a thickness of 0.7 - 1.5 metres and will cover the land for an average of four months or 120 days. (plus or minus 30 days depending on where you are in Finland).

The problem is that the snow carpet does not stay dry and airy. If the temperature rises above zero the snow gets soaked and wet and even more so if the falling snow changes into sleet or rain. In such an event the water penetrates to the bottom of the snow carpet and when it freezes again the vegetation is suffocated.

In some cases greenkeepers clear the slush from the greens before it can freeze on the grass again. So far

this practice has produced quite good results, but experiences gained are still limited and the drawback is that it requires staff all around the year. Alternatively, wet snow can be dried by ploughing furrows in the snow carpet to lead the unwanted water away from the area. This method works particularly well for the fairways and makes them dry faster and gets them in full playing condition earlier in the spring.

Nearer to the coast the winter weather is more unsettled and there are more problems with icing. The ice layer can regularly attain a thickness from a few centimetres up to more than 10 centimetres. There are recorded cases of greenkeepers being taken by surprise by layers of up to 40 centimetres of crystal clear ice. Ice even collects on the descents and slopes when

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Coping with the elements to produce quality putting surfaces (above)

the ground is frozen and the air is so cold that rain water cannot run but freezes on the spot.

Clear, solid ice is crushed with the aid of large bog rotovators fitted with spikes of hard metal. As the crushed ice is cleared from the course a considerable amount of water is removed from the surface. The clearing process should start about two months after the ice cover appears, but certainly not later than when

the vegetation begins to develop a smell. The greens must never be cleared bare of protection in temperatures which are down to -25°C . And if so, the weather must remain mild for several days ahead.

Top dressing the snow carpet

Top dressing the snow carpet with sand is one of the routine jobs undertaken when winter is about to turn into spring. As the ground is still frozen even heavy tractors will not make damaging tracks, and, as the grass is still fully protected by snow, it doesn't even matter if you use chains on the tyres. In addition to improving the structure of the grass, the dressing will speed up the melting of the snow and the drying of the fairways. The heat of the sun will be absorbed by the dark sand and the snow will practically melt away before your eyes.

Covers, electricity and checking for winter diseases

During the last ten years the use of



covers has become more and more common on golf course greens. They help to protect grass which has been exposed too early in the spring from drying and to promote earlier growing. *Poa annua* greens, in particular, seem to benefit from an accelerated start to their growth when covers have been used. Without them the *poa* trails behind the bentgrass greens by two to three weeks so the use of covers evens out the handicap.

At some golf courses electrical heating has been installed in the ground under the greens. The installation and running costs are very high therefore it is not practical. The problem from the point of view of running a course is that even if the greens are kept clear you cannot play if there is snow on the fairways.

The protection of vegetation is one of the most important maintenance jobs in the autumn whereas the monitoring of winter diseases caused by fungi goes on throughout the winter. The winter diseases based on fungi that cause most damage are called pink snow mold *Fusarium nivale* and grey snow mold *Typhula incarnata*.

Maintenance in the summer

As the ground and air eventually heat up after the winter, all growth and all development in nature set in at a phenomenal speed. The basic rule is that the course and the greens, in particular, have to be in prime condition by midsummer. In other words the course has to be put in shape within one and a half months no matter how extensive the winter damage has been. After midsummer the daylight conditions settle down and the growth of the greens gradually slows down.

Most courses possess their own assorted range of fairly good maintenance equipment even though it represents quite a lot of money. A great concern

here is that the machines work reliably. The short season affords no time off for machine repair and maintenance.

During the peak season mowing often has to begin as early as 3 to 4am on the busier courses and for the rest it is normal to start at 5 o'clock.

During mid-season the courses are kept in tournament shape for as long as possible as the courses are really packed; the average would amount to some 250 (or even a record 300) rounds a day. There are about 7,000 players a month and during a whole season this means 25,000 - 30,000 rounds of golf.

Due to the continental climate in Finland, the temperatures in June and July can reach heatwave figures and rainy days are mainly concentrated in the spring and autumn. Consequently, irrigation becomes the principal task for the greenkeeper in the hot mid-season, even though this summer (1998) produced a record amount of rainfall; up to twice the normal rate and in some places even three times above the average.

Poa annua's start of growth has always proved quite reliable but even so a new cultivation is seeded every year. This saves the greenkeepers from a lot of work in the spring and even though the *Poa* greens are a little late in becoming playable a greenkeeper can rely on *Poa* despite what bentgrass fans think.

To summarise, it would be fair to say that golf courses in Finland are maintained to the same exacting level as they are on the international circuit. The greenkeepers have learned to adjust their course maintenance and techniques according to the growing conditions and the prevailing climate. Among the greenkeepers there is a good spirit of mutual assistance, which helps us solve any problem and colleagues are never left in trouble.

So all in all, irrespective of the rigours of our winter, golf course maintenance in Finland remains an attractive and thoroughly educational occupation.

