

Experience a Big Factor in Preparing Course for Winter

Winter is a fact of life for golf courses in Canada. The effects of ice damage and snow mold may be relative strangers to the lower mainland of British Columbia, but everywhere else across the country, the annual battle to prepare greens and fairways to survive from November through April is a critical aspect of a superintendent's life.

"Basically, you're preparing for the winter from the word go," says Ted Tom, Superintendent of Uplands Golf Club in Thornhill, Ont. "You are trying to keep the grass healthy to survive the winter by your efforts year-round."

But fall has its specific cycle of activities for a maintenance crew, and every green on every course needs some attention. Local conditions produce local philosophies and tactics, but there are a number of constants.

Most courses see their fall work cycle beginning in August. Parker Sutherland, of Selkirk Golf & Country Club in Manitoba, says, at this time, he reduces or eliminates nitrogen-rich fertilizer, and starts applying potash. This enables the grass to store carbohydrates for the winter, but doesn't prompt the grass to start fresh, lush growth which could invite disease in the winter months.

Aeration is a standard procedure on many courses, combined with removal of the cores the process produces. For Franz Hasenhundl, of Hillsdale Golf & Country Club in Ste-Therese, Que., this is an important step to prevent compaction of the ground after the playing season, when its tramping golfers and its golf carts, have done their worst. With this loosening process, the turf is better able to absorb moisture, so it doesn't collect around the crowns of the grass plants.

Ice Damage

"We do this in fall and in spring, and if possible in mid-season too,"

Canada's wide range of climatic conditions calls for a variety of responses by superintendents to the challenges of the Canadian winter period.

By Edward Mason

Hasenhundl says. "Our biggest problem here is ice-damage, so we have to deal with it by a variety of means."

Aeration also gives better rooting, and removes some of the thatch of dead grass-roots that can be a harbor for disease. It's not a universal fall practice; Saskatchewan's low winter snowfall, for example, makes it of dubious value for drainage purposes, but even there aeration is usually practiced through the playing season.

A favorite protection in prairie areas is using flax straw, from a crop grown by local farmers.

Most courses in Canada will raise their mowing height about a month before the playing season ends. This allows the grass a chance to strengthen itself for the cold weather.

And, of course, there's the necessity of blowing out the irrigation system with compressed air once there's a serious threat of frost. In some areas, even this doesn't prevent damage to the pipes. Ken Creighton, of Mactaquac Provincial Park Golf Club in New

Brunswick says the frost level in his area goes down as much as five or six feet, so that the shifting that results often causes springtime problems, especially when water is forced back into the system.

"Some years, it's May before the ground thaws completely," he says. "That also means we have a shortened growing season to cope with."

Dealing With Mold

Pink Snow Mold belies its name by appearing in some areas as early as October, when heavy rains and cold nights give it an opportunity to get a foothold, and make conditions more favorable for the grey snow mold that grows beneath the snow-cap. Many superintendents still make an educated guess about fungicide spraying and apply their first dose just before the snow arrives.

"The old school of thinking was to spray just before the first snowfall," says Tom. "But sometimes that means you have to put it down on top of the snow, because you got caught."

There's also the problem that Pink Snow Mold often crops up early as a result of damp, cool conditions. Once it has a hold, it weakens the grass on the greens for the attacks of Grey Snow Mold once the snow does come down.

Sutherland prefers to make a first application of fungicide in September, a second in October, and a last one at some point before snow is predicted. This keeps the grass in optimum shape and offsets the possibility of fall rains washing fungicide away. Some broad spectrum treatments are known to wash off quite easily, while mold-specific types are less prone to do so.

The problem facing Canadian superintendents is greater than that for their United States counterparts. There is an adequate range of pesti-

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cides available, but increasingly, the best new US or European products are not seen in Canada.

"I wish we could have a broader range of fungicides," says Wayne Brown, superintendent of the Red Deer Golf & Country Club in Alberta. "We have a fairly short list because the approvals process is so long and expensive. Who's going to pay hundreds of thousands to get Canadian approval, when they'll only sell a couple of hundred bags every year?"

At present, there is no sign of any shortening of the Canadian approvals process by admitting United States research data as valid.

Covering Greens

Once the greens—or sometimes the fairways and tees, at wealthier courses—are treated, there's the question of covering greens against ice. There's still debate over exactly what ice does to grass. Some experts hold that the ice traps the plant's carbon-dioxide, slowly poisoning it, while others think standing water seeps into the plants' crowns, raising their freezing point and destroying the cell structure. But it's indisputable that if too much ice sits for too long on top of grass, or worse still if a pattern of thawing and freezing happens, it spells trouble.

"We often have a January thaw in this part of New Brunswick," says Creighton. "Around March, that refrozen water is causing your problems. Sometimes I'll take a chain-saw and make cuts 10 feet apart, and two inches wide, so that melting water from the snow and ice on the green drains off onto the fairways."

An alternative approach he uses is to sprinkle a black fertilizer on the ice, which absorbs sunlight to create melting and air-pockets in the ice. It's then much easier to push or shovel the ice off the green without damaging the surface.

Ashley LeGeyt, of Gallaghers Canyon Golf Resort in Kelowna, B.C.,

says with his short winter season (mid-November to mid-March), he likes to plough what snow he has from the greens in late February, and put down a blanket to encourage spring growth. This also protects against the spring cycle of freeze-thaw damaging the crowns of the plants.

"This is classified as a semi-arid region," he says, "and we normally see only 12 inches of snow and rain a year. This particular course is carved out of the forest above the town of Kelowna, which means it gets more snow than the valley bottom 600 feet below us, but I haven't had a need for blankets and straw through the winter."

Kelowna also has the advantage that the ground only freezes down to a few inches. This means spring growth can start much earlier.

Variety of Methods

Just as every superintendent has his preferred fungicides, so too there's a wide variety of covering methods.

Regular straw, once a favorite, is out of favor in most places these days, unless it's combined with something else. Tom echoes a widely held opinion when he says he feels it can kill the green.

"On its own," he says, "straw can create heat, which you don't want. If you have a cover between the straw and the green, then it's probably okay."

Franz Hasenhundl in Ste-Therese, like Creighton in Mactaquac, uses straw with a permeable blanket underneath on his problem greens and an impermeable blanket on top. The blankets, Hasenhundl says, are costly, but they last four to five seasons.

"Straw itself is little cost," he says, "it's just the labor factor in putting it down." The sandwich approach of this system allows for venting at the lowest level, but also keeps snow and ice off the green surface.

The impermeable plastic-sheet blankets are relatively new in Canada, having been widely available since only 1990-91. Although some superintendents have worried they don't allow carbon-dioxide to escape, none of the superintendents contacted for this article reported any

difficulties from CO2 poisoning of grass.

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Peat-moss and sand top dressing, used exclusively in some areas as winter protection, are used in others as an additional covering for the crowns of the grass. Brown in Red Deer uses such a dressing, usually without covers, except on greens where exposure to winds means the snow itself can be blown off, exposing the top dressing. Last winter, he says, his course experienced ice damage, so he is considering using blankets on some greens this year.

Flax Straw Useful

A favorite protection in prairie areas is using flax straw from a crop grown by local farmers. Glen Trentini, of Emerald Park Golf and Country Club near Regina, says this has the ability to bind like wire, and does not blow off the way normal straw does.

"Our problem here is wind," he says, "and most of our 90 sand traps get blown out in the winter. I spend up to \$20,000 a year on replacing the silica sand we use, and nothing else I've tried has worked any better.

"So, tarpaulins are too hard to hold down on top of greens through the winter, but the flax straw stays." He estimates he uses 200 bales of it annually.

Sutherland in Selkirk also favors flax straw, applying it to greens at between 12 and 18 inches deep, which amounts to three round bales per

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5,000 sq. ft.

"There are two problems with flax," he says. "First, it's very labor intensive to apply, and second, you have to be choosy about your flax. It has to be good clean straw, with no other plant material in it."

Flax straw does hold water, and this can be a problem in very low-lying areas. However, Sutherland says it seems to keep the moisture in most cases above green level. His part of Manitoba is not prone to freeze-thaw spring conditions, although they were a problem two years ago, so ice damage is not a major threat for him.

While it's the greens that command any superintendent's attention, there are other parts of course maintenance that call for attention in fall. While Trentini's course was designed to have few trees, Hasenhundl's in Ste-Therese is much more wooded. Once the leaves are off the branches, he has his crew trimming dead or hazardous branches.

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"Essentially, we're under snow here all winter," he says, "so everything comes to a halt. But if we wanted to build a lake, late fall or winter is maybe a good time to do the work on that."

Tom cautions that while labor has to be a consideration, planning with good ergonomics in mind is the crucial thing. A superintendent needs to

develop a grasp of how his course's micro-climate operates, and how to moderate nature's harshness.

Creighton, for example, has a course with greens designed to drain in one direction. He is now re-engineering the drainage on them over a 10-year period, so that frost water and water from melting snow can drain in more than one direction. This will help when the deep frost-line thaws in spring.

"You have to keep up to date with new knowledge," Tom says. "Seminars are important, because as we find out more about the response of grass to winter, so we can plan to protect it better."

Edward Mason is a professional business writer and editor with detailed experience in technical and management topics.

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