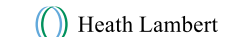


Microdochium nivale: the Canadian conundrum of turf pathogens

This month Dr Terry Mabbett looks at *microdochium nivale* – with a nod to our Canadian cousins



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and predominant south-westerly (Prevailing) moisture-laden winds.

This geo-climatic preference closely matches the most favoured environmental conditions documented for *M. nivale* – namely cool to mild periods (0°C to 15°C), with leaf wetness periods greater than 10 hours a day for several days on heavily thatched and slow growing turf.

However, *M. nivale* as a pathogen of turf is a lot more versatile than this. The fungus is capable of growth even at temperatures between 21°C to 25°C and as low as -6°C. This means the disease can be a significant problem on turf in most temperate climates, e.g.

continental type climates with very cold winters but hot dry summers (central Europe and large parts of North America) and Mediterranean type climates (large parts of Australia and New Zealand) with their classic hot dry summers and mild wet winters.

M. nivale will clearly not be a problem all year round in these climates with their winter and summer extremes, but most will have at least one season or time of the year when weather and turf condition is conducive to high pathogen activity, manifested and expressed as Fusarium patch.

For instance, *M. nivale* is essentially a disease of Spring and Fall

(Autumn) turf in many parts of Canada and the so called 'winter grasses' (temperate grasses), used to sustain and maintain turf during late autumn, winter and spring in the Adelaide area of South Australia with its classic Mediterranean type climate.

More specifically and separately, the capacity for activity at sub-zero temperatures allows *M. nivale* to cause a completely different disease under snow cover and called 'Pink Snow Mould'.

The Canadian Conundrum

Situation surrounding *M. nivale* on professional turf in North America, and particularly in comparison

MAIN LEFT: Pink mould develops more quickly with slower snow melt

INSET ABOVE: What lies beneath

with the UK, is especially interesting. With snow cover a certainty in many US States and Canadian provinces much more attention is paid to the pink snow mould disease dimension of *M. nivale*.

UK greenkeepers can expect turf to carry on growing right through winter to a greater or lesser extent depending on the area of the country. In contrast those managing golf courses in countries like Canada must cater for and cope with turf growth and activity completely shutting down during winter.

Turf grass plants respond to extreme low temperatures by going into 'dormancy' for their own protection and to ensure survival until the next growing season in spring. This will clearly affect the 'nuts and bolts' of any fungicide spray programme used, including timing of the last summer/autumn application and the first application in spring in anticipation of the resumption of grass growth.

For instance, if autumn fungicide application in Canada is delayed until after extensive symptoms of Fusarium patch become apparent it may be hard if not impossible for greenkeepers to get rid of the disease because grass growth is slowing rapidly with the grass plants going into dormancy.

Separated by a common language

North American scientists and turf managers appear less 'Luddite' in their attitudes to changing the common names of turf diseases to suit the semantics of mycology and mycologists. The playwright George Bernard Shaw once said that Americans and British were separated by a common language. The potential confusion created by the many different names created for this turf disease either side of the Atlantic shows this to be true.

North American scientists and turf managers now invariably talk about 'Microdochium Patch'. The turf industry in Britain allowed mycologists to change the name of the fungus from *F. nivale* to *M. nivale* then carried on calling the disease Fusarium Patch as though absolutely nothing had happened.

The Canadians are in an even bigger quandary and conundrum being faced with the choice of the different spellings used in common names for turf diseases either side of the Atlantic Ocean (in US and UK).

In Britain we talk about 'Pink Snow Mould' while to the Americans it is 'Pink Snow Mold'. Simi-

larly the Americans refer to a turf disease caused by *Typhula* spp as 'Gray Snow Mould' whereas in Britain we call the disease 'Grey Snow Mould'. Prevailing advice in Canada is to use either but not to mix and match. Thus 'Gray Snow Mould' is a definite 'no-no'.

Pink Snow Mould or Microdochium Patch

Whether or not Pink Snow Mould and Microdochium Patch should be considered as different and separate diseases, albeit caused by the same pathogen, is a vexed question. It has certainly exercised the mind of Dr Tom Hsiang at the University of Guelph in Ontario, Canada, a country which clearly knows more and better than most about deep prolonged snow cover and the development of Pink Snow Mould under snow cover. The disease is more pronounced under longer snow cover and slower melts in spring enhance disease development.

There was an attempt in the late 1990's to consolidate all common names (Fusarium patch, Microdochium patch and Pink Snow Mold) into 'Pink Snow Mold'. But as Dr Hsiang points out this began to cause a very awkward and indeed meaningless situation for regions of North America that very seldom experience snowfall, yet were having outbreaks of what was called a 'snow mould disease'.

A more recent and equally unsatisfactory trend, especially in the U.S., uses Microdochium Patch for symptoms caused by *M. nivale*, whether they developed with or without snow cover.

Message from Canada is that despite Microdochium patch and Pink Snow Mold being caused by the same fungus the conditions under which they develop and spread and the type of symptoms expressed are entirely different. As such they should be regarded as completely different and separate diseases of turf.

However, the real clincher in Canada comes in spring and especially if the turf went into winter dormancy carrying extensive symptoms of Microdochium patch, and subsequently developed Pink Snow Mold under prolonged snow cover. As the snow melts in spring and the grass resumes its growth, classic symptoms of Microdochium patch develop on the turf grass around the edges of Pink Mold patches.



ABOVE: *Microdochium nivale* as Fusarium patch the disease caused in the absence of snow cover. Picture courtesy Vitax

BELOW: Nothing is patch on Fusarium when it comes to universality. Picture courtesy Syngenta



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Chalara 'genie' out of the bottle so what comes next?

Dr Terry Mabbett, who broke the news about the chalara ash dieback outbreak in GI September, returns with an update on this constantly evolving issue

The chalara 'genie' is out of the bottle. By year end chalara ash dieback caused by the fungus *Chalara fraxinea* was recorded at 323 sites covering plant nurseries, recent ash tree plantings and established woodlands.

Golf courses anywhere in the UK are now at risk. There is now no chance of eradication so what's the situation and what comes next?

Many courses have young common ash trees along fairways or in the rough. Others have old ash trees in prominent positions as hedgerow relics from previous farmland. Some courses have tiny ash copses because the pioneering trees are adept at colonising any vacant land.

Under no circumstances should greenkeepers plant any more common ash (*Fraxinus excelsior*) or related species like *Fraxinus angustifolia* (narrow leaved-ash) because many are also at risk. Disease is spread by spores formed in fruiting bodies on infected leaf litter from June to October which then infect the current seasons' foliage during wet weather.

Woody tissue may already be infected thus requiring removal and destruction of affected trees, but the only symptoms are bark lesions on young trees. Even these may be absent because the pathogen has a long period of hidden infection.

Potentially infected mature ash trees are more difficult to assess. They may show crown dieback in summer - but don't jump to conclusions because many fungal diseases produce similar symptoms.

Start to inspect all ash trees now. Suspected outbreaks should be reported to the UK plant health authorities (details at the end of this article) who will advise. Young trees are relatively easy to deal with as they can be dug up and inciner-

ated on site. Leaf litter under and around infected trees should be gathered and incinerated. Biosecurity including disinfection of boots, tools, equipment and transport will be required.

Large mature ash trees could present a problem. DEFRA advises that mature trees should not undergo sanitation felling. That's fine for woodland owners but not so clear cut for golf clubs with members' safety to consider.

Common ash does not have the longevity of English oak. Trees do not have to reach a grand age and dimensions before they are designated as veteran or ancient specimens. At best, open-grown common ash trees attain 200 years before declining and dying in the following fifty years. Greenkeepers should consult local authorities, the Forestry Commission or conservation organisations like 'Ancient Tree Forum' before undertaking work on old ash trees.

Pre-emptive measures to prevent valuable old ash trees from infection are desperately needed. Dr Glynn Percival, a plant physiologist with Bartlett Tree Experts (a commercial company at the forefront of oak processionary moth control) has proposed micro-injection of pesticide, used in North America to control diseases and insect pests of trees.

During this process, ash trees are injected with a pre-determined dose of truly systemic fungicide. The fungicide moves to all parts of the tree via xylem and phloem tissue and protects the tree from infection and disease development and may eradicate existing infections providing they are not too well advanced.

Tree injection is not new and was used to manage Dutch elm disease in the 1970's, but the injectors damaged to bark to encourage

secondary pathogens. MBC (benzimidazole) fungicides had only just come onto the market and were not truly systemic (by modern systemic fungicide standards). They were unable to reach the top branches of big elm trees where bark beetles were discharging fungal 'cargoes' (spores of the *Ophiostoma novoulmi* fungus) into trees. These drawbacks were not due to any deficiency in tree injection as a concept but still left a legacy.

Modern micro-injection is obtrusive and not accompanied by collateral bark damage. Contem-

Start to inspect all ash trees now. Suspected outbreaks should be reported to the UK plant health authorities

porary systemic fungicides are like that well known beverage, accessing those parts others cannot reach.

Two problems stand in the way, one practical the other political. There are no fungicides approved by CRD (the UK's Chemical Regulations Directorate) for tree injection. Word on the grapevine is that the plant health 'mafia' is opposed to the idea. This may more to do about private sector experts treading on their 'private' turf rather than sound scientific objections.

However, they do appear to be quietly listening to what Dr Percival has to say. DEFRA has since contacted agrochemical manufacturers and asked them to put forward candidate fungicides for appraisal. If micro-injection comes to fruition, one or more of the [systemic] fungicides currently used to cure *Fusarium* patch of turf may be used to control chalara dieback in ash trees.

Reporting chalara ash dieback and obtaining information

In England and Wales:
Chalara helpline: 08459 33 55 77 (open 8am - 6pm every day) or plant.health@forestry.gsi.gov.uk

Scotland:
Forestry Commission
Scotland: 0131 314 6156 (9am - 5pm weekdays + out-of-hours messaging system) or fcscotlandenquiries@forestry.gsi.gov.uk

BELOW: Shoot dieback and leaf necrosis may start to appear in June

Picture courtesy Forestry Commission



Bark lesions on young trees are the only real sign of *Chalara fraxinea* in winter
Picture courtesy Forestry Commission



Steve Castle visits Easingwold Golf Club to see how an ambitious tree management project has transformed the course – at very little cost

Seeing the light



THIS IMAGE: 5th hole before the work
MAIN IMAGE: 5th hole after the work

Take a look at the photographs in this article. Can you believe they were taken just a few months apart? Easingwold Golf Club has transformed a stagnant, shrouded course into a healthier, brighter, blooming vista for play.

Course Manager Andre Erlah joined the six-strong greenkeeping team at the parkland course in 2001, and began by introducing a full aeration programme.

He explained that previously the club were stuck in a vicious circle.

“They knew they should aerate but the members didn’t want their rounds to be disrupted so they just put fungicides down”.

However, the looming long-term issue, which was literally preventing the club’s growth, was the sheer proliferation of trees on and around



PROFILE

Name: Andre Erlah
Born: Stoke-on-Trent, 2 March 1971

Marital status: Married with a five-year-old daughter

Hobbies: Thai boxing, travelling, reading

Favourite Sports Team: Stoke City



the course in this rural corner of North Yorkshire.

Andre admits it was impossible to accurately gauge how many there were - but there was no doubt there were far too many and they were largely in the wrong places, threatening the very future of the course.

"There had been no tree management at all since it first opened in 1930", he says.

"A lot of planting had been done in 1976 and over the years the course became very dense and dark, giving me problems keeping the tees, greens and fairways in good shape.

In fact it was so dense some areas of the course never received any natural light at all because of these big scrub oaks, birches and pines.

Even on the brightest summer



The team at Easingwold: George Edwards, Robin Cornforth, Andre Erlah, Guy Borthwick, Lee Frost, David Raper, Scott Needs.
Photograph by Rebecca Erlah



days the course was dark due to this immense foliage.

“The flags on some of the greens would flutter in the breeze, but when you squatted down to ground level there was no air movement whatsoever.

“This meant the greens became stagnant leading to disease and poor drainage - if you’ve got a mature tree in competition with grass for water and nutrients the tree is going to take everything.

“Also, the sheer number of trees meant we had very limited traffic routes around the course which were leading to problems with compaction.

“Yet another reason was from a golf strategy point of view – certain trees were continuing to grow and preventing our members from playing certain shots.

“I turned to the greens chairman and told him I’d gone as far as I could with the course until we solved the tree problem.”

The club met with renowned woodland consultant John Nicholson who produced a report which supported Andre’s beliefs, and outlined which trees required removal.

However, the club soon realised the cost for the work would be very

substantial which was out of the question – particularly with the recession biting.

But they came up with an ingenious solution with the help of a nearby timber merchant.

“In the autumn of 2011 we approached the merchant literally opposite the course, wondering if they would be interested in doing the job.

“We worked out that he could take the brush away and sell it to power stations, saving us thousands of pounds.

“Luckily as he was so close this removed the haulage costs which normally absorb all the profit from the timber.

“He would then make money on selling the felled timber as logs.

“This meant we could confidently go to our committee explaining how this was the ideal opportunity to go ahead with the plan and they were 100% behind us.

“We got permission from our landlord, and enlisted John to obtain the necessary felling license from the Forestry Commission.

“We placed a big sign at the first tee spelling out clearly to our members what we were doing and why we were doing it.

“The contractors came in and worked solidly for five months removing the trees we had highlighted as problems.

“Luckily we had a reasonably dry winter which helped.

“It was staggering to see how much timber was produced.

“There was an industrial chipper here filling up three lorries a day.”

Crucially, because Andre and his team had communicated the project to members, they were mostly on board – some even giving up their time to help out grinding the tree stumps left behind.

“Our main outlay was £9,000 for a stump grinding machine.

“We were quoted around £400 a

ABOVE: 6th tee before the work and RIGHT: afterwards

Woodland Management Workshop

A seminar to showcase the work at Easingwold Golf Club will be held on Thursday 21st March 2013 beginning at 9.45am. Speakers will include Andre and John.

Full details can be viewed at www.the-gtc.co.uk and www.greenkeepertraining.com. The cost is £65 per person with lunch included.



week to hire one so it was far better to buy, and we would be able to sell it later.

"I was trained up to use it, and when members came forward offering their help one day a week I trained them up.

"There must have been 2,000 stumps to grind but with everybody mucking in we kept to our schedule."

Andre and all at the club were well aware of the potential controversy associated with removing certain trees.

Some members complained that they had a particular affinity with certain trees which they had enjoyed watching flourish over decades.

"It's a strange issue - I heard an agronomist say removing a tree reminds people of their own mortality! We did check before removing certain trees that had been planted as a memorial.

"Of course some people were nervous about the project, but we were absolutely convinced it would be hugely beneficial for the club long-term."

After five months of perspiration - removing around 2,000 trees -

the changes were dramatic, and embraced by all but a tiny minority at the club.

Andre, who trained at Reaseheath College in Cheshire, says: "Admittedly, when the work was ongoing it looked terrible with all this heavy machinery and piles of timber, but when it was done almost everyone liked it.

"We were getting feedback from members who had been here for years amazed they were finally playing in daylight!

"There have also been other bonuses.

"Last year we saw new flora and fauna never seen before.

"There are foxgloves everywhere, bluebells are blooming that never had a chance before.

"One member was even encouraged to plant hundreds of bluebells, confident they will grow in this environment.

"Mature oak trees with real character have flourished.

"It's also helped us stay open for longer during the extremely wet year we've just had.

"Removing the problem trees has helped drainage across the course."

Ultimately the course is healthier, drier and more aesthetically pleasing

The pictures graphically show the difference.

Taken on similar bright afternoons, the previous jungle has been transformed.

When the sun does come out the course is bathed in dappled light instead of darkness.

"Ultimately the course is healthier, drier and more aesthetically pleasing when previously it was stagnant and you can actually appreciate individual trees.

"You look back at the photos of the course before this project and you can't believe how messy and dark it was.

"It's still ongoing - we've broken the back of it but still need to thin some trees out and make other amendments.

"But we're on top of it now.

"I've loved doing it, it's made a huge difference to the course and I feel I've made my mark.

"I've left a legacy here now which makes me feel extremely proud."

Section Notes

Please email your notes to steve.castle@bigga.co.uk by the 15th

All the latest news from your Section

Around The Green



SCOTLAND



Central

Very little news to report from the Central section this month. We had a full compliment of attendees on the irrigation design seminar in December and the feedback was positive. Thanks to Adrian Mortram for presenting this. If you haven't received an email about this year's Pairs competition yet, it will be with you shortly. Providing entries are around the same number then the format will be similar to the past two years. Entries for the spring outing at Carnoustie Burnside on Wed 17 April will be with you by the end of March. If you don't receive emails from me on these matters then please check we have your correct email address or get in touch and let me know. Both entry forms will appear on our website www.biggacentralsection.org.uk or join us on Facebook. We have no educational events confirmed at the time of going to press but still hope to fix something up before the start of the season.

Congratulations to John Watson CM at Downfield GC who has just become a father. If anyone has any news they would like to share or suggestions of educational events we could run then please let some of your committee know.
Gordon Moir



North

On behalf of the committee we hope everybody got through January ok and got back into

the swing of things after the holidays. The months just seem to fly by now and it won't be long for some of us before the season starts. Paul Sharp will soon be sending out the 200 club tickets so hopefully you will buy your own and maybe a few more and send the money back before the first outing. The two outings this year are now confirmed and we will be at Duff House Royal Golf Club on Thursday 25 April and then Edzell Golf Club on Tuesday 24 September. The Scottish Conference this year is on Tuesday 5 March so hopefully we will see a good turn out from the North Section as it is very worthwhile attending. Robert would like to add that his colleagues have been very busy working on the 18th green at Royal Aberdeen as it has been completely rebuilt and the surrounds re-shaped. Robert added that this is part of an ongoing programme to rebuild 7 greens at the club over the next 4 years. The committee was wondering if any members have any pictures of last month's terrible flooding, if they would like to forward some pictures we could put them in the magazine. Well that is the news again as things are still a bit quiet in the section but if any member has any news big or small please get in touch with Robert Patterson mob 07931639548 or Dale Robertson mob 07784517534.



East

Not much on the go within the section this month, as I write this report the snow is lying on the ground again, but I am sure the spring is just around the corner! The section had a social night out over the festive period in Edinburgh with all welcome, we had a low turnout

but we hope to up the numbers next time and get a good catch up going. The Open Support team should be notified over the next month, so good luck to all who have put their services forward from the sections, if any members of the East section are lucky enough to be selected could you please get in touch if you are interested in doing a daily blog etc. of the experience. The section has looked into the option of putting a bus on for our spring golf outing being held at Seahouses on 23 April, please can all who are interested in travelling with the bus contact myself or our section secretary to register your interest and we can get it booked if required. A reminder also that if any members have educational topics they wish to see being set up or have any other opinions on what they think the section could offer them then please drop me a line. As I finish of this report spare a thought for poor Rory McIlroy and his new club deal with Nike \$120m, do you think he is taking a chance with this change or do you think he will tame the Tiger? Go Rors bring it home for the East Section.

Scott Corrigan
scottcorrigan4@aol.com or
07877098237



West

New year greetings to all and hopefully we have all been busy making the course playable for the keen golfers who were unable to play for so long due to the wetness and frost conditions over the festive period.

There is not a lot happening at present except preparing things for the start of next year. I should bring to your attention the Scottish Conference to be held once again at Dunfermline

on 5 March, some excellent speakers have been found so I would recommend attending. Cost will be £35 per ticket with lunch included as usual.

Spring outing will be held at Buchanan golf club and the date is sometime in May, hopefully not when I'm in Turkey playing golf. The Autumn outing is planned for September with a date still to be set but the venue will be Eastwood Golf Club.

The site visit for Loch Lomond which was cancelled back in November will be rescheduled for February or March so please contact David McBride to book your place.

A couple of congratulations to be handed out, firstly to Graham O'Connor who moves from Symbio to take up the position of Scotland area manager for Farmura and secondly to Kerr Hunter from Gleddoch who moves into that vacant position at Symbio, the west section would like to wish both every success in their future roles.

The Section would also like to pass on their best wishes for the future happiness of Alex Cruickshank and his new wife Angela who recently tied the knot, may you both have many years of happiness together.

And last but not least, I will report on how things went at BTME in the March issue, but until then I hope everybody has a good start to the year and keep well.

Please do not hesitate to get in touch if you have any events pending, you can get in touch by phoning 0141-942-5554 or 07790823914, or by e-mail on stuart.taylor@glasgowgolfclub.com.

The next west section committee meeting is 18th February should any member have a relevant question then please supply this by that date.

Thanks again
Stuart Taylor