

Read this for:

- / Leatherjackets and chafer grubs
- / Pesticides
- / Turf health

# LEATHERJACKETS: THE FULL STORY

BIGGA and Syngenta have teamed up to raise the subject of pest damage with the wider golfing industry

Glenn Kirby, Syngenta, and Karl Hansell, BIGGA

Photograph courtesy of Graeme Roberts, Windelsham GC

**In the UK there are two insect pests that are particularly damaging to our turf surfaces – chafer grubs and the ever-increasing issue of leatherjackets (although there are several species of each).**

The problem has escalated in recent years. Previously we have had very effective controls and for many years the chemical product Chlorpyrifos kept the scale of the problem under control. The product's widespread use on farmland to limit agricultural pests also served to keep populations of cranefly (the adult stage of leatherjackets) low – and hence reducing background pressure on golf courses.

However, authorisation to use Chlorpyrifos was withdrawn in 2016. At the time the golf industry underestimated the implications of this and the scale of the challenge it presented. Little or no research had been undertaken to fully understand the problem.

This is a growing challenge and has the potential to be devastating if you are unlucky enough to be on the receiving end of a high-pressure situation.

Syngenta undertook a social media survey earlier in the year, with an unprecedented immediate response from greenkeepers, with over 10% of UK and Ireland courses represented within hours of the launch.

Only 1% of respondents said they were seeing no damage from leatherjackets; in an industry that has zero tolerance to this problem, the fact 99% are reporting damage is an incredibly worrying statistic.

Glenn said: "My goal when I started this journey was to get all our customers to zero damage, as that's what I would have wanted as a course manager. But it

has become increasingly clear to me that the whole industry is going to have to adjust its expectations. We all want perfect surfaces year-round and without additional tools in our armoury I suspect that may not be a realistic goal."

Chlorpyrifos was incredibly effective in managing leatherjacket populations. It was also cheaply available and probably overused by greenkeeping teams. The product was quickly removed from the turf market but slower to leave other sectors.

In some situations the issue is now so severe that greenkeepers feel pressured into illegal actions to use products that are no longer registered for turf. That cannot be tenable for them, nor sustainable for the industry in the longer term.

The real solution is to do things properly, to get the right products registered, to understand what cultural practices can be put in place to reduce the pressure and, most importantly, communicate with clubs and players about the scale of the challenges.

“It has become increasingly clear to me that we are going to have to adjust our expectations

None of these are easy or quick and they need significant investment of both time and money, which is never what people want to hear.

A similar example of the scale of management required is the turf disease Microdochium patch, That too can cause serious loss in turf quality for players and has seen withdrawal of a wide range of products used to manage it over the years. However, it can now be effectively managed by using good cultural practices, modelling of disease risks and adopting new safer chemistry applied at appropriate timing.

The problem is it took years of research and investment to gain that »

BIGGA and Syngenta have been working on a comprehensive document that explains the overarching situation with regards to the damage caused by leatherjackets and chafer grubs. This document will be circulated around the governing bodies of golf and other influential groups, to raise awareness of the challenges greenkeepers are facing. You can download a copy of this document from the BIGGA website and members are encouraged to share it with their club management team.

BIGGA is also hosting a live webinar with Glenn Kirby on Thursday 13 May at 4pm to discuss the topic further. Head to the BIGGA website or scan this QR code now to register.



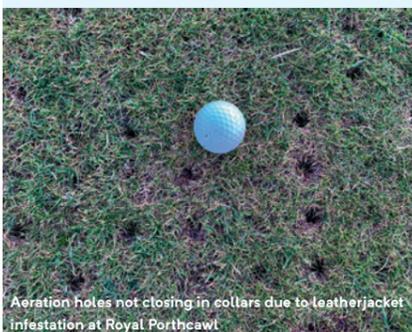


**Ian Kinley, Royal Porthcawl, Wales.**

“We’re a hotbed for leatherjackets and it is heart breaking when you see the damage they cause. We have benefitted from being in lockdown because it meant we could put sheets down on our greens during the day. We’ve not had to focus on playing conditions and so could focus on dealing with these pests accordingly. If golf had been live, I don’t know what we’d have done.

Our 7th green was the worst affected. At Christmas it was as strong as I’d ever seen it, but by the end of January it had fallen off a cliff and had only about 60% grass cover. The difficulty we’ve got is there is so little understanding from the end user’s perspective. Golfers will believe nothing has changed, particularly coming out of lockdown, but there needs to be an understanding of the problem and how there is not a lot we can do in the short term.

Chemical products are available elsewhere, but we can’t spray illegally as the consequences are very severe and include fines or jail. By acting illegally, you would only be prolonging the inevitable because stockpiles will eventually run out and you will be embarking down the road we are already on. It will also create a misrepresentation of where the industry actually is with regards leatherjackets.



Aeration holes not closing in collars due to leatherjacket infestation at Royal Porthcawl



Fairway damage

knowledge, but the golf industry has barely started on that journey with regards leatherjackets.

Take a glance at social media and you will see greenkeepers pleading with the ‘industry’ to get a grip and help them through this situation. It is all too easy to feel helpless, but we all have a part to play. Communication needs to be stronger with the golfer and the governing bodies need to play a stronger role in that.

There also needs to be increased commitment from the industry to understand the impact of our cultural operations on this pest.

We can’t kick the can down the road with problems like this and we must recognise that things are changing. With societal desire for reduced pesticide usage, there is an associated cost — which for golf members in this instance is reduced turf quality due to increased numbers of pests. The greenkeeping and wider golf industries must be proactive and communicate the challenge with golfers. They won’t understand at first, because it’s not their area of expertise, while others won’t want to believe it.

At the same time, the industry is moving to see pesticides approved and regulated to new standards and protocols — which is undoubtedly positive. The government regulatory system has to

respond quickly enough to fill the void in which the industry currently finds itself, while greenkeepers and agronomists need to find the optimum ways to use the tools available.

**THE GOLF INDUSTRY: WHAT CAN WE DO?**

Greenkeepers are an innovative bunch and we will get around this. However, the sports turf industry currently has a number of the pieces of this complex

“The greenkeeping industry and wider golf industry must be proactive and communicate the challenge with golfers.”

jigsaw missing, which are preventing the formulation of an effective treatment plan.

We need to understand the life cycles of these pests much better.

Our current understanding comes from

studies that were done in the 1940s. These were important pieces of work and very thorough, but they investigated agricultural fields and grassland - not the situation we are currently in.

Golf greens have some very intensive management and irrigation practices that just aren’t replicated in nature and what we’re finding in our fine turf surfaces is quite different to those original studies.

Over the past two years Syngenta has been gathering insect hatching pattern data on the Pest Tracker website, with sightings of adult pests submitted by turf professionals in the United Kingdom and

Ireland. It provides an invaluable up-to-date picture of seasonal hatch times and patterns. As an industry it has been fantastic to see so many people engaging with this monitoring, which is perhaps an indication of how important the situation has become. This work will need to continue as we attempt to build a greater understanding of the pests and how they can be better managed.

**CONTRIBUTE: WHAT CAN YOU DO TO HELP?**

Firstly, submit your insect sightings on Pest Tracker, as the more data gathered the more we understand.

Monitoring is also vital. Seeing a rogue leatherjacket on the surface of the turf does not mean you are in trouble, but equally seeing none doesn’t mean you do not have any. An effective way to monitor pest populations is by covering the areas of the turf with small square sheets over the winter. This will give an indication of how many leatherjackets you have and what levels of control have been achieved with any measures you’ve put in place.

Sheets should be one-metre square and placed down overnight during mild temperatures. The sheet tricks the larvae into thinking it is night-time and so they come to the surface, enabling you to get a snapshot of the overall population.

This kind of monitoring shouldn’t just occur on putting surfaces, but greenkeepers should take the time to monitor other areas of the course.

Leatherjackets are mobile pests and they can move a long way — you would be surprised at the distance they travel. The population will redistribute itself over a wide area, so when thinking about control measures, greenkeepers must think bigger than just the surface they are trying to protect.

The motivational speaker Dr Roopleen once said “learning is a matter of gathering knowledge; wisdom is applying that knowledge”. Monitoring will allow us to gather the knowledge. We’ll gain the wisdom of how to solve the problem once that knowledge is gained.

**PREVENTION: WHAT EXISTING METHODS OF PREVENTION ARE THERE?**

**Acelepryn**

Emergency Authorisation has been applied for the preventative pesticide Acelepryn. This will be the fourth year that an Emergency Authorisation has

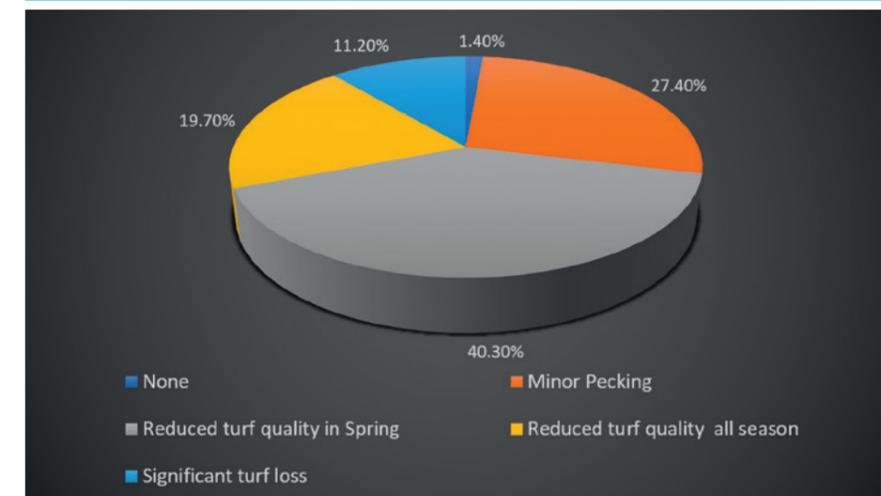
been sought, enabling use outside of a full registration. The Emergency Authorisation has previously been granted for use under the following conditions: golf greens and tees plus 10% of fairways (so long as the total area falls with 10% of total golf course area); race courses and gallops; airfields. Under the previous three years’ Emergency Authorisations, Acelepryn has become a foundation stone of many turf managers’ programmes and by itself is providing enough control to deliver good playing surfaces in areas of lower insect pressure. In high insect pressure sites, it has proven to be very effective at reducing the scale of the problem but it doesn’t provide enough control to eliminate the problem. There is no guarantee that another



Sheeting is an effective way to measure population levels

Emergency Authorisation will be granted, just as there is no guarantee that full registration will be achieved in the future as the challenge of reversing the decline in insect populations is high on the regulating bodies’ agenda. »

**2021 survey of leather jacket damage**



**WHY YOU SHOULD NOT SPRAY ILLEGALLY: PROF JOHN MOVERLY, AMENITY FORUM**

The leatherjacket issue is undoubtedly a major challenge. Greenkeepers and groundsmen are under real pressure to produce high quality surfaces and have lost the plant protection product used for this. Many have felt real pressure in their roles and the temptation to consider use of unauthorised products can be great.

However it is very important that such action is not taken. The use of unauthorised products is an illegal act and, if discovered, can lead to heavy fines and in serious cases imprisonment. Not only does using unauthorised measures put the club at risk, it seriously damages the industry’s reputation and could lead to more restrictions for everyone. As said, it is

recognised that the pressures can be high, especially from owners and users of facilities, but taking unauthorised routes, while possibly meeting the short term challenge, can do no good for anyone in the long term.

The Amenity Standard, launched in 2020, is a really positive way to demonstrate that all operations at a facility are undertaken to meet best practice and the law and has gained strong support from policy makers.

To hold and display the standard requires membership of a recognised assurance scheme and one specifically relevant to golf is now available.

Whatever the challenges, it is vital that the golf sector fully commits to best practice and does things right.



**Dan Kendle, Newquay Golf Club, Cornwall**

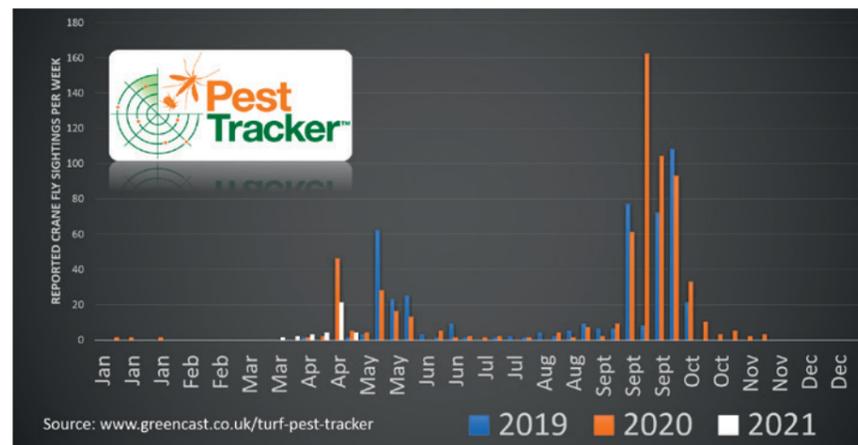
“We’re on the edge of Newquay, with Fistral Beach on one side and housing around the other three sides, so we’re a green space in an urban location and that means craneflies are attracted to our site to lay their eggs. We took part in a trial with Syngenta and saw good protection up until Christmas. But since then, the course has got progressively worse and they’re now extremely pitted with lots of grass coverage. I’m absolutely devastated and my stress levels are off the scale.

I’ve been here for just over six years, my deputy started three months after me and we’re both just absolutely gutted and devastated at the scale of the problem. Last year we were getting comments that the course was the best it had been for 40 years and now it feels like six years of hard work has gone down the pan because the greens are so horrific. Being a course manager is a lonely job anyway, but I feel like I’m on my own.

It is important that those who are influential and have a voice in the golf industry are able to support greenkeepers when their courses are hit by this awful situation. Golfers should understand that greenkeepers are working with limited resources and are doing the best they can.

When we have done some sheeting successfully, we have been scraping thousands of leatherjackets off every green in the morning using shovels and it is just devastating to see, because you know of the damage that is being caused.

**Reported crane fly sightings on Pest Tracker in 2019, 2020 and 2021**



Source: www.greencast.co.uk/turf-pest-tracker

**Nematodes**

Insect parasitic nematodes are parasitic to damaging turf pest insects and historically proven to be tricky to use and achieve consistent results. Lots of work is being done in this area to improve the efficacy of them and when applied at the right time of year they have been proven to reduce leatherjacket populations. As with all technology, timing is critical and the desire to use them at a time when needed, rather than when most effective, can lead to disappointing results. As always, ask for the data to support application timings.

**Cultural practices**

This is where there is currently the largest knowledge gap. We don’t fully understand the impact of many of the everyday greenkeeping activities undertaken to maintain quality surfaces.

Trials to investigate the potential causes or influencing factors of

leatherjacket damage are particularly tricky due to the variable nature of the pest. How activities such as fertiliser programmes, aeration and soil moisture affect the prevalence of leatherjackets just isn’t known at the moment.

It has been suggested that aeration may play a role and the damage leatherjackets cause may be more severe if there are increased aeration practices.

However, aeration is an essential surface management process and so research work is needed to understand the implications. If the two prove to be connected then we may need to rethink our aeration practices, which will in turn present another set of new maintenance challenges.

**Sheeting**

Sheeting is the process of laying dark and moisture-retentive sheets across large areas of greens overnight during mild conditions to trick the leatherjackets into staying on the surface for longer



Predator damage at Newquay GC



Thousands of leatherjackets can be taken off a single golf green, such as these from Newquay GC

than normal. When the sheets are removed, the leatherjackets are quickly removed using mowers or brushes.

It is labour intensive, disruptive to golf and requires the climatic conditions to be right, but it does prove effective at reducing numbers and this practice may need to become more prevalent in future.

For sheeting to be a success it must be a programmed approach with the correct time and energy invested to increase success rates. It may be a workable strategy for greens but would prove almost impossible for larger scale areas

such as fairways. As with most things, more research is needed.

**Integrated Turf Management**

A further approach would be to boost plant health, particularly during periods of intensive leatherjacket larvae feeding. The aim is for healthy plants to outgrow the loss and damage to root mass and tissue that is being removed by that feeding insect. Having both a good understanding of leatherjacket populations in your situation and a suitable turf nutrition programme to counter this is important to give a chance of presenting putting surfaces that are acceptable in the spring. The challenge comes when growing conditions limit the turf’s capability for recovery or where the sheer weight of pest pressure overwhelms the plants.

Some other products are now offered on the market that are claimed to help during periods of insect pest pressure. Remember any claims to kill the insect need to be supported by a full registration and a MAPP number. If offered products that fall into this category, it is always tempting to adopt the “what harm can it do?” approach,

rather than looking to tested strategies, but it is wise to ask exactly how they work and ask for independent trial data.

**LONGER TERM: WHAT DOES THE FUTURE HOLD?**

The rapid rise in insect pest damage in recent seasons clearly presents some very serious issues for greenkeepers and those who maintain sports turf surfaces. For the industry to develop an effective »



A leatherjacket living in an aeration hole

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**Paul Shepherd, Nizels Golf & Country Club, Kent**

Our problems began in 2019 and exponentially got worse into last spring, where we had huge amounts of damage. On a number of our fairways, we found complete loss of grass coverage from 200 yards in to the hole. It was a combination of the leatherjackets eating the roots and the wet winter, which caused a perfect storm of damage. The greens were being munched top and bottom, because they were coming to the surface and eating the plants and also eating the roots. It's soul-destroying to see. I've been here for 13 years and I think I've done a very good job, but then something like this happens and it's completely out of your hands. You know these pests have always been there, but there's always been a bottle to reach for to take care of the problem.

The members were all trying to be supportive, but at the same time they're paying for a product that is damaged. You try your best and you work and work, but it got to the point last year where every conversation was about leatherjackets and I was even dreaming about them at night! It was very stressful and I didn't enjoy my job last year.



Nizels GC with large areas of damaged turf



An example of turf health suffering due to an infestation of leatherjackets

strategy to tackle this challenge requires a number of things in place:

- / Increased investment into research to understand the pest;
- / Increased research to understand the implications of our cultural practices on the pest;
- / Development of different technologies to manage pest numbers, such as pheromones, trapping and biological solutions;
- / Better prediction models of pest lifecycles;
- / Improved stewardship measures and strategies that could enable a wider range of insecticides to be utilised.

Firstly it requires clear recognition of the challenge and the scale of leatherjacket damage. It will then need some acceptance from golfers and club management of the difficulties faced by grounds staff, while the necessary measures are put in place and can be

widely adopted. That will involve the participation of greenkeepers to demonstrate and communicate the challenges we all face industry-wide.

The whole golf industry will need to step up and work together if we are to return to a world where we can produce great surfaces without fear of them being damaged by insect pests.

**FOR MORE INFORMATION OR TO CONTRIBUTE TO THE DISCUSSION, VISIT:**

- Turf Pest Tracker**  
<https://www.greencast.co.uk/turf-pest-tracker>
- Syngenta GreenCast Advisory Turf Management Blog:**  
<https://greencastadvisory.net>
- British & International Golf Greenkeepers Association:**  
[www.bigga.org.uk](http://www.bigga.org.uk)



An aeration hole that is unable to recover due to a feeding leatherjacket



Leatherjackets on a green

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