

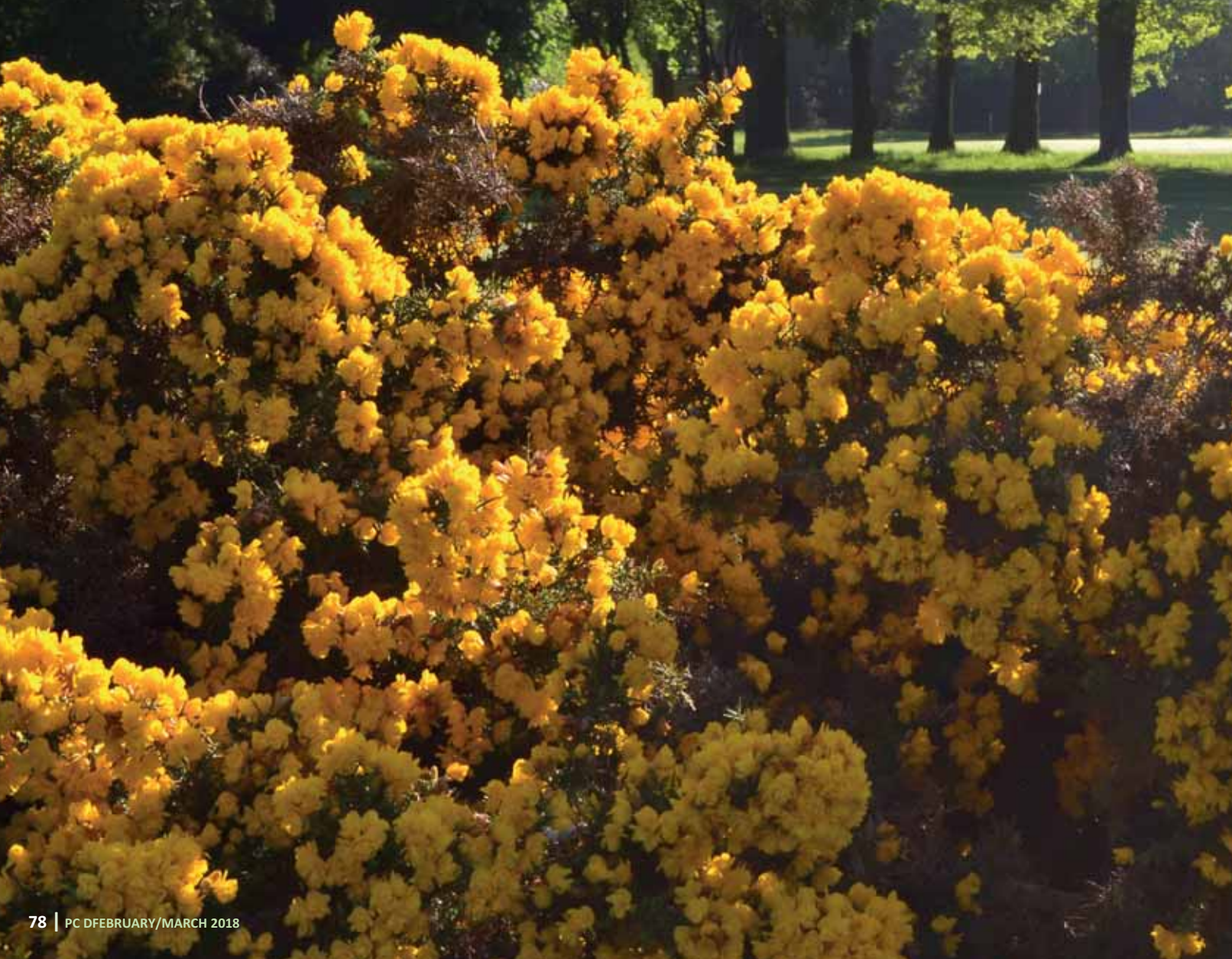
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Harpenden Common Golf Club

Reaping the benefits of soil biology



Rethinking course maintenance at Harpenden Common Golf Club to focus on soil biology has reaped rewards on the course and in the clubhouse, reports Greg Rhodes

It's January and course manager of Harpenden Common Golf Club Steve Brocklehurst walks off the 18th hole after inspecting the green with his nephew Sean, head greenkeeper at the private members club.

Close behind, a foursome is concluding what will have been a challenging round on the parkland course. Nothing unusual in this era of year-round play but, until recently, winter golf at this Hertfordshire venue often

would have proved a no-go.

Persistently waterlogged, soggy greens had dogged the 18-hole tree-lined course for far longer than the greens team or the committee cared to mention. But a switch three years ago to a biologically-based maintenance strategy, rather than a purely chemical and physical one, has transformed playability to the point where lost days are a rarity rather than the norm.

The golf club that originally sat here was founded in 1897, but moved to another site in 1931 when the present Harpenden Common set up shop.

Membership is thriving at around 650 and the course sees some 30,000 rounds of golf annually under competitively-priced five- or seven-day deals.

Confidence runs high on and off the course as the last three years or so of fresh thinking and an about-turn in its approach to turf management have placed the club on a

firm footing, in more ways than one.

The bunker redevelopment programme launched in 2016 and its tees counterpart, begun last year, bear witness to the success of what went before - a switch from a traditionally physical and chemical approach to greens maintenance to one based on soil biology.

Sean and Steve take up the story. "Before we introduced a biological programme in 2015, the greens were extremely wet and not always playable," notes Sean, "so we had to resort to remote temporary ones."

"Trolley bans were in force for several months and we were working with an agronomist on ways to improve the condition of the greens. Their December inspection and January report resulted in a recommendation for more of the same. Our supplier, which had conducted soil analyses, and noted a deep black layer, high thatch levels and deep compaction, suggested we

“The programme was not working and we were still suffering with soggy greens and temporary putting surfaces



Left to right: Sean Brocklehurst, Steve Brocklehurst, Terry Crump and Hillery Murphy



Sean Brocklehurst

After Verti-Draining and ProCoring [which helps particles penetrate deeper], we applied the zeolites into the surface with Flymos. We were like kids with a science experiment

apply more chemicals.”

Steve adds: “We lost much of the bent content of the greens in winter and Poa filled the gap to complete a vicious cycle. Application of aggressive granular feeds and hollow coring failed to improve their condition. They were not true and that affected ball speed across the surface. A following report from the agronomist recommended sand Graden injection.”

So in August 2014, it was duly applied, with 40 tonnes of kiln dried sand introduced across the greens. “Very labour intensive,” says Steve, “with eight workers on a green.”

After the agronomist came back with the same recipe in 2015, the club decided enough was enough. “The programme was not working,” says Sean, “and we were still suffering with soggy greens and temporary putting surfaces.”

Then the club was introduced to a biological approach, whereby short and long-term options were recommended, recalls Sean, and that March, half a tonne of zeolites was applied to each green and to each approach on the Common course and the seven USGA greens on the Jockey Field course.

A further application of zeolites followed in September 2015, then regular inputs under a longer term strategy. “We noticed an instant change after the first application,” says Steve. “The greens dried out quickly after incorporating the zeolites into the surface with minimal disruption.”

Then came the next phase of bringing the course back to life. “Compost teas were applied all year, starting in the first quarter of 2015 to begin the process of soil revitalisation. Hillery Murphy, our biological consultant, visited us regularly and this really helped us understand the biological basis of the programme we had introduced,” Sean says.

The zeolites are applied in an unconventional though extremely effective way. “After Verti-Draining and ProCoring [which helps particles penetrate deeper], we applied the zeolites into the surface with

Flymos. We were like kids with a science experiment,” he adds.

The new system has paid off. Core samples showed that thatch had reduced considerably and a strong root system had been established down as far as five inches. “A huge improvement.”

The programme built momentum throughout 2016, with Terry announcing that the course maintenance budget had doubled. Last year, the team began feeding fairways and applying rebrews on to approaches, greens and surrounds, with more of the same scheduled for 2018.

“Zeolites worked fine from day one,” says Sean, “and we’ve extended application of them beyond the approaches, where we use larger diameter 2-5mm sized granules. The drier, firmer greens are almost too fast for our older members now, but that’s not a bad problem to have.”

Gone are the temporary greens, the trolley bans and the black layer. The thatch layer has dwindled and less Poa is taking root. Bent is thriving too; “It springs up faster and thicker now,” says Steve, “and we time seeding to coincide with zeolite application to reduce workload. The minimal disruption proved a big factor with the greens committee and has gone down well with members.”

The extra budget gave the team the resources to improve the whole aesthetics of the course - to feed other areas of the site and to recruit a new member of the greenkeeping staff. A new machine for zeolite application and a new 600l spray tank for applying the compost teas to larger areas were purchased.

The soil biology is also working as a disease prevention measure. “Our before and after images of fusarium patches show a vast reduction,” Sean confirms, “and it’s confined to just four greens now.”

The integrated pest management (IPM) programme comes into force in winter “to keep the grass plant hard and to help prevent disease,” Sean continues. “We apply feed, SB Biocarb 3.0.12 and SB Vigour, SB



We time seeding to coincide with zeolite application to reduce workload. The minimal disruption proved a big factor with the greens committee and has gone down well with members

Chelated iron to add colour - the course's winter coat - then in summer, compost teas go down every four weeks."

Team game

Course manager Steve Brocklehurst, 63, arrived in 1975. "I heard about a part-time position here as a tractor driver. My twelve weeks turned into forty-three years!"

"Working under a good general manager is key in my job and in Terry [Crump] I have one of the finest. He listens to us and we

hold enough respect for each other to be able to disagree over things, walk away then resume talking."

"It helps that we are both totally dedicated to the job. The club and course are in the best shape they have ever been and this has been, and still is, a great place to work."

Club and course have seen a steady flow of investment of £3 to £4m over the years.

In 1995, life member and media commentator Ken Brown designed seven

new holes, each sporting a USGA green, on the other side of the course dubbed the Jockey Field.

The new greenkeepers' complex arrived in 2000, new changing rooms in 2006, new clubhouse in 2013 and, most recently, a tarmaced 120-space car park: "A transformation from the old gravelly, muddy mess," states Steve.

Steve's younger brother Michael Brocklehurst, 58, and Sean's dad, joined the team just after Steve in 1975. "He came in as

“Michael and I have had just one row in all that time - about the 20lb socket set for the gang mowers that he’d left outside



a tractor driver and moved up to become deputy head greenkeeper if he wanted it, but all the paperwork put him off so stayed where he was,” Steve says.

How does the family get on, working side by side for much of the time? “Michael and I have had just one row in all that time,” recalls Steve of his brother; “about the 20lb socket set for the gang mowers that he’d left outside.”

That’s it? “That’s it.”

So the family firm is alive and kicking. “The club committees were a bit sceptical at first as, at the time, we were half of the workforce, but they’re comfortable with it now,” Steve adds.

“We share the duties,” Sean chips in. “Steve and dad are in at weekends, while we all look after the planning and paperwork - very egalitarian. Steve and I tend to handle the budgets.”

After completing his A-levels, Sean sought work at Harpenden Common but, with no vacancy at the time, he was apprenticed as a

greenkeeper at nearby Brockett Hall for a few weeks, before a job turned up at the club and he moved here in September 2008.

“The key thing for me is that I’m working with dad and Steve and can gain from their vast experience and knowledge, allowing me to progress quickly. I knew little before I came here, but am always learning.”

NVQ Level 2 and 3 in the bag, plus an HNC in golf course management and an HND in the same discipline underway via a distance learning programme with Elmwood College, Sean knows that qualifications are key to moving up.

Already a member of the influential BIGGA Young Greenkeepers Committee, he is growing rapidly in stature and influence among his peers.

“The GCM course teaches you how to focus on projects and tasks from start to finish to deliver best results,” he explains, before adding: “I’m not sure about eventually moving into an office-based post though as I like working outside too much.”

Only metres from the course - he rents one of the original cottages sited next to the clubhouse - the temptation is surely great never to switch off from the day job but, he assures me: “When I close the door at the end of the day, that’s the work done for me and I can enjoy home life until tomorrow. When you are inside relaxing, you barely recognise where you are, it’s so peaceful.”

Referring back to the positive relationship with the general manager, Sean adds: “Terry is keen for me to learn more about how the club is run, so I gain a greater understanding of his side of the equation.”

“But it’s mutual and Terry wants to share our knowledge of our side too. He is our middleman with the committee. If he knows how we work, he can argue our case more strongly when necessary.”

“I’m in a really fortunate position - learning from Steve, with his forty-three years experience, and from Terry, who has about forty years of business knowledge behind him.”

“The key thing for me is that I’m working with dad and Steve and can gain from their vast experience and knowledge, allowing me to progress quickly





We want healthy soil because that improves playability and a good course equals good business and happy members

Those insights Sean is bringing into play in his role on the Young Greenkeepers Committee. "Our aim is to give young people in the industry a voice. I may be confident of my abilities but many in greenkeeping are not - some even avoid attending seminars because they lack that confidence, so if we can encourage them to gather together and start talking to each other, they can start to build their belief in themselves."

The groundswell of emerging talent can

help forge change to long-cherished practices, Sean believes. "Many clubs have been doing the same thing for so long they may be reluctant to introduce new things. They place plenty of emphasis on chemical and physical turf treatments, but not enough on the biological aspects, in my view."

Steve adds: "Yes it's all about soil viability. We want healthy soil because that improves playability and a good course equals good business and happy members."

Greens team member Ollie Claridge, 25, came to Harpenden Common six years ago from the retail sector but golf is in the family blood - his father Dean and brother Sam are members, while Sam has played for England U21s.

With chainsaw and spray qualifications under his belt and NVQ Level 2 and 3 tucked away, Ollie can spread his duties across the course - managing turf or the many trees that line the holes.



“Ollie doesn’t have a title as such,” explains Sean. “We try to place everyone on an even footing.”

Just turned 21, newcomer of three years Sam Cook is just embarking on his NVQ Level 3. A trainee carpenter working at a local club, Sam is Sean’s next door neighbour.

“Having the cottages is really handy for us,” adds Sean. “They’ve been refurbished recently and are really comfortable. The club rents them from the local council, along with the car park.”

As you’d expect at a club with such a strong emphasis on learning, Harpenden Common is committed to an apprenticeship programme.

Ryan Hodges, 21, started ten months ago and has just embarked on his NVQ Level 2 after arriving from Vauxhall. A scratch golfer, he no doubt favours the fast greens (summer Stimpmeter readings average 9 to 9.5) although these can prove a challenge for less accomplished players, says Sean.

Thanks to the bolstered budget Terry

recently put in place, the greens team have been able to recruit another member. Harry Topping, 17, came last August straight from his A-levels and is already signed up for his NVQs, not forgetting BIGGA membership – making the team tally seven.

“Harry is part and parcel of our strategy of improving not only course playability, but also the cosmetic aspects too,” explains Sean. “I’ll also serve as a mentor for Harry, and Ollie too, so that we develop a strong, young team of greenkeepers.”

Mention of the new recruitment, spurred largely by course improvements, prompts Sean to stress the need for a broader understanding in the clubhouse of the challenges the greens team face.

“General managers need to be more educated about the demands the golf course makes on maintenance - why we do what we do,” he states. “Major disagreements can arise between the greenkeepers and the clubhouse when communications are poor, as they seem to be in many clubs. The

expectations of members on greenkeepers and vice versa are important to clarify and good communications helps that process,” Sean amplifies.

“We are lucky here that communications with the clubhouse and members are strong. Planning ahead helps ensure members know what’s happening on the course so they are prepared. By constantly updating each other, Terry and the greens team can keep members informed of developments and therefore reduce risks of complaints.”

It was Terry’s logical approach to problems out on course that helped spark a change in the course maintenance policy, Sean recalls. “Applying tonnes of sand to the greens twice a year, along with loads of other products, then removing them in March before the start of the season seemed nonsensical to him.”

“What we have now is a far less disruptive closed system that involves introducing air into the greens, light sand dressing of twelve tonnes across eighteen greens twice a year,

“General managers need to be more educated about the demands the golf course makes on maintenance - why we do what we do





frequent application of compost teas and application of zeolites periodically, Sean adds.

“That’s been our strategy for the last three years and is working brilliantly to the point where we only plan to apply zeolites once this year.”

Steve again: “The course is built on clay, and that will always be there, but what we have developed is a 100mm rootzone on top of it, vastly improved drainage and little if any disease outbreaks.”

“The other key advantage over our old programme is the contact we have with our consultant, Hillery Murphy. We were usually visited once or twice a year but, under the new programme with Soil Biology Ltd., Hillery comes in once a month to check the soil profiles and tailor our plan to the course conditions.”

“He’s done a huge amount for us, working hard and providing plenty of advice all round. He’s one of the best people I’ve met in my forty-three years here. His knowledge is fantastic. He continuously reminds us that soil biology is key and has shown us that it works.”

Hillery Murphy explains: “The original report from the agronomist the club were using recommended the installation of drainage under fifteen greens or the course would be unplayable.”

“The results from applying our system here prove less intrusive techniques can avoid such measures. Continuing application of zeolite can also

ensure that soil biology will work and that microbes will thrive.”

Bunker bonus

As the area is common land, criss-crossed with public walkways and bridleways, the club works with the public in steering a happy medium between members on course and local runners or residents dog-walking.

“Both sides are quite accepting of the situation,” says Sean. “We have roads running across the course too, but everything goes smoothly most of the time.” That said, dog fouling of bunkers is an issue the greens team have to contend with.

Speaking of bunkers, the redevelopment programme begun in 2015 by ProFusion is steadily spreading across both sides of the course. “The Jockey Field bunkers do not drain well,” says Sean. “We are forever pushing back sand, but the Blinders being installed, with their 2in thick rubber liners, draw water through the sand. Ten have been completed in the Jockey Field, with another six still to do.”

Blinder enables architects to design bunker faces up to an angle of 35° and is claimed to minimise sand wash from them.

That leaves plenty of the thirty-eight total to tackle. “We may fill in some that are wrongly sited and unfit for purpose and enlarge others,” adds Sean. “They all need to fit the lie of the common land.”

ProFusion is also redesigning

“The Graden procedures we’d introduced had not improved the problem of poorly draining greens. I spoke to Steve and the team and said that we couldn’t go on like this



a new 9th tee, with another four or five tees earmarked for redevelopment, incorporating synthetic winter tees to reduce wear and tear and align them to greens, Steve explains.

Seed sorrow

Nationwide changes in council and Highways Agency policies on spraying verges to keep weeds at bay mean Harpenden Common is not the only course to suffer unwanted windblown seeds descending on its turf.

“We had issues with the Jockey Field on the seven USGA greens opened in 1996,” Sean explains. “Ryegrass had become established and created patches of differently coloured grass than the fescue-dominated sward we prefer.”

Tree management intensifies from October to year-end to keep the estate of mainly oak, silver birch, hawthorn, cherry and maple in check.

Soil biology benefits

“The soil biology programme has been a revelation to us,” states Terry Crump, the club’s business manager for the last decade.

Formerly in charge of production at the Vauxhall Motors car manufacturing plant in Luton, Terry, 63, had been helping the club on a voluntary basis since retiring.

“The club was a pleasant environment in which to work and, as a golfer with a handicap of 5, I enjoyed playing the course too,” adds Terry, a finalist in the Golf Club Managers’ Association manager of the year award in 2014.

“Going back four or five years, I became interested in trying to adopt a different approach to maintaining the course. The Graden procedures we’d introduced had not improved the problem of poorly draining greens. I spoke to Steve and the team and said that we couldn’t go on like this.

“Members were unhappy with us digging the greens up twice year, and the £50,000 to £60,000 cost of doing it with little or no improvements made me think that there had to be another way.”

“The new programme allows play year round and that’s important because our priority is to retain members and there is so

much competition in the area we were in danger of losing members to neighbouring clubs.”

“I’d read about the soil biology approach that Welwyn Garden City had taken and the success they’d had, so we met them and they talked Steve and me through their programme, which avoided digging up greens and involved spraying micro-organisms on to the greens to create a healthy soil profile.”

“We decided to go for it full tilt and the results speak for themselves. We have no temporary greens or tees, membership is healthy at 650 - the ladies section has increased most of all, which we are really pleased about.”

“Our priority is membership retention - to keep members happy, rather than trying to attract more society or corporate days.”

“I believe that, if we hadn’t changed our way of doing things, we would be in serious difficulty with memberships now, afflicted with soft boggy greens that were unplayable for significant periods of the year.”

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“We sat down with Hillery to work out the costs of introducing soil biology methods to the course. They were initially higher than we had been spending, but we were a club underinvesting in the course compared with comparable clubs so we were only coming up to a par with them on outlay.”

“I’m delighted our membership level is so healthy, helped also because we have the lowest seven-day membership fees in Hertfordshire for private members.”

“Although the soil biology programme cost me slightly more in the first three years, it has delivered results and now annual outlay has fallen because we have reached the balancing point where we are ticking over nicely.”

The future looks set fair, Terry believes. “Bring on more of the same, using the compost teas and zeolites. I’m used to witch doctors trying to sell me something that’ll work miracles, but soil biology has done the business for us. Our feedback groups on course conditions and playability confirm that.”

“We have a great working relationship with Hillery, who developed the soil biology programme for us across the whole course. He has an infectious personality and is full of enthusiasm, and has given us more support in a month that we used to receive in a year from previous advisors.”

“The greens team is delighted that I’ve managed to double their budget because of the financial benefits that soil biology has brought to the club. It just wasn’t the thing to close a course because of poor playability. Now, we have far more control of how the club functions.”

“We saw the light because the business needed to, rather than because I wanted to go green. Now I believe it’s time for young greenkeepers like Sean to learn more about soil biology methods and the benefits they can bring.”



HARPENDEN COMMON GOLF CLUB



‘Nature’s magnet for nutrients’

That’s how Paul Adams, managing director of Soil Biology Ltd, describes zeolites, and he should know, having imported, processed and sold the materials for more than 15 years.

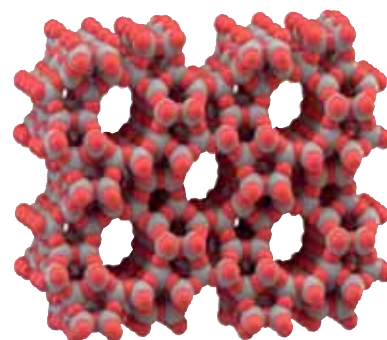
Zeolites are essentially aluminium silicates, whether man-made (more than 150 of those) or naturally occurring (formed from volcanic origins when lava and ash fall into water).

Every member of this family of minerals has one natural affinity – each attracts and holds ammonium and has a high cation exchange capacity.

Similar to clay minerals, zeolites differ markedly in structure. Clay expands hugely when it takes on water then contracts significantly when water is lost.

In contrast, zeolites’ framework remains rigid amid what is a reversible process of taking on or releasing nutrients from its structure.

With their rigid lattice structure, zeolites’ large open spaces within the cage-like molecular framework function as pores and channels. Negatively charged zeolites therefore attract and hold positively charged nutrients into the structure.



What’s in the shed?

- Kubota 5030 Tractor
- Kubota STW40 Tractor
- Kubota L3600 Tractor
- Kubota RTV900
- Club Car XRT
- Baroness LM315 x 2
- John Deere 2500B
- Baroness LM2700
- Baroness GM2800
- Baroness LM180
- Toro 1600 Hand Mower x 2
- Toro Pro Core 648
- Charterhouse 7416 Verti-Drain
- Charterhouse 1700 Slitter
- AgriMetal 3500 Blower
- Trilo SG400 Leaf Collector
- Dakota Turf Tender 410
- Gambetti AMT600 Boom Sprayer
- Greens Iron 3900