

Jim Arthur hands out some advice to those who feel living with poa is the only answer

CONTROLLING POA

I can hear at once a chorus of "Oh! No it can't"... "Oh! Yes it can"... "Who says so?" The answer to the last question is easy - literally hundreds of experienced Course Managers of all ages and with a wide range of courses to prove it, varying from the best of our links courses to large and small members' clubs, ranging from around a century old to a few years. They are backed by a small band of truly qualified and widely experienced agronomists who have seen the results of years of treating courses by time honoured and proven austere methods of greenkeeping. It will be noted that I limited my approbation to a few because far too many of our so called advisers are really thinly disguised salesmen or merely tell their clients what they think the client wants to hear.

In 55 years of golf course advisory work I have seen it all before and the remarkable thing is that despite all the commercial hype against our traditional standards and the ceaseless media support for the nice and green feed-and-water school, so many of our good courses still show excellent fine firm turf derived from our native bents and fescues.

Few of even our very best Course Managers would claim to have absolutely Poa-free greens but they control it, hit any invasion hard and avoid encouraging it so that even in flush growth periods their greens never suffer from the disfigurement of seeding Poa and in winter they play to full greens when Poa dominated turf is virtually unplayable or disease ridden. Who has not seen good

bent/fescue greens invaded by soup plate sized patches of pure Poa contrasting so horribly with the residue of the fine turf.

Recently reported surveys imply that greenkeepers must learn to live with Poa: that it is impossible to control; and that without it we would have nothing but bare ground. This is totally untrue. Nature in any case abhors a vacuum and if you kill off the Poa by management not herbicides, by encouraging finer grasses, then they will fill in behind the penalised Poa. Admittedly in severe cases which are always the results of misguided management, though perhaps several decades earlier, there can be a very uncomfortable time unless you are lucky with the weather and skilled in fine tuning when the sickly Poa is going faster than the *Agrostis* is coming in. A term for this was coined 30 odd years ago - *Arthiritis*, but once over, one never looks back. It does demand conviction and support from all levels (management and members alike) as well as a thick skin and deaf ears.

The first thing is to look dispassionately at the main causes of Poa annua invasion and dominance. It is beyond debate that the first and foremost cause of Poa invasion is the application of even very low levels of phosphatic fertilisers. Many fertiliser manufacturers admit this and sell nil phosphate mixes (of which more anon) but they do not understand that above very low levels potassic fertilisers are just as encouraging, as a moments contemplation of the graph showing the effect of rising lev-

els of P & K on turf composition (1981 research).

Yet articles are published all the time by fertiliser firms advocating really high levels of potash e.g 15-0-12 applied as frequently as every two to three weeks and then they wonder why Poa takes over.

This link between P & K and Poa has been researched and proven for over 90 years, on both sides of the Atlantic but has been studiously ignored by fertiliser salesmen and their bosses. It was before the First World War that Dr Murray working in South Africa postulated that (in his own words)... "his research proved that a system of management designed to provide an adequate supply of nitrogen in an acid medium, with a very limited amount of phosphate and potash - the only source of the latter being such as is contained in the usual compost (top-dressing) will best produce fine turf."

This research was repeated with the same results time and time again, both in the States and in the United Kingdom. In the 1920's, the Acid Theory was based on this research and was highly successful initially in converting lush wormy alkaline seedy turf into fine *Agrostis* (bent) swards. However, without adequate irrigation (or none at all), a series of droughts in the mid thirties coupled with the reduced drought resistance of the acid turf caused problems.

Some pundits, including the then Director of the Board of Greenkeeping research, R. B. Dawson, stupidly went back to NPK - perhaps unsurprising in view of his



background, at the Rothamsted Agricultural Research Station, while others modified the system and increased aeration, with excellent results.

I served under Dawson for six years, when I joined Bingley in 1940. I was extremely fortunate to have been trained by Richard Libbey, the senior adviser and a botanist of international repute. He taught me to take a botanical not a chemical approach to fine turf management. He pointed out that the basic principle on which all fine turf management depended was that if one created or copied those conditions in which the fine grasses grew naturally, they would dominate all other species, as they did in nature.

He emphasised that fine turf grew best on the poorest soils — land too infertile to farm, which is why it was still fine turf and not ploughed for cropping.

His advice which I have followed for 55 years and taught to literally thousands of greenkeepers and not just beginners either was to apply nitrogen only sparingly, using a balanced mix of organic and inorganic, (ammonia, blood hoof and horn and iron in equal-parts) in late spring, repeated once or if twice, at reduced rates, with nothing after the end of July. This mix has been available from Supaturf as SS/D for nearly 40 years and is still their best selling brand though not the biggest tonnage. Cheaper copies using urea based nitrogen are not as long lasting. Always ask for a written declaration of the sources of nitrogen from the supplier - the empirical percentage is not enough.

A short word about the critics of sulphate of iron - which has been the greenkeepers friend for a century! It imparts colour without encouraging lush grass. It is an effective fungicide, a good moss filler, hardens the turf and acidifies the soil to discourage worms and weeds. Yet some - chemists to a man - condemn its use, and you can be sure that to a man they are Poa annua fans!

An interesting point arises regarding statutory declarations of analyses. If a firm declares nil phosphate and in fact the mix contains say 3% - because this allows them to use cheaper phosphate-contaminated ingredients, it cannot be prosecuted as the law defines only that the

declared levels are supplied but does not complain if the levels are exceeded. Only where we can persuade Inspectors that phosphates in these circumstances are harmful could action be taken. I suggest informing suppliers that their mix will be analysed independently to see if it really is phosphate free!

Fertiliser manufacturers on the whole seem to accept that greenkeeping really wants nil phosphate mixes, but have no understanding that potash over very low levels is just as harmful. Advice to apply potash at high levels every four to six weeks is definitely wrong unless you really want Poa annua green. So also is advice to apply potash in the autumn - it goes straight to the drains.

with phosphates we can find excellent greens whose root zones show as low as 3 ppm - and need no phosphate additions. Do not believe that P & K will induce disease resistance! I know very many courses where neither have been applied for years and which never suffer from disease because their traditional austere management does not encourage "Fus".

I would bet a pound to a brass farthing that all greenkeepers who say that Poa annua is inevitable so lie back and enjoy it have two things in common. First they are not supported by their management or have made no effort to inform their members - or lack the conviction and strength to go against the current.

speeded up then roll them - a tip as old as greenkeeping! If you deep aerate afterwards there are no ill effects. Do not chase colour and rely on frequent grooming to pick up seed heads

A word on over-seeding! A case can be made with dominantly bent-fescue greens to thicken up fine turf by over-seeding in early autumn, though establishment is at best 10%, often nil. Over-seeding in spring or into dominantly Poa annua greens is a predictable waste of time and money. I well remember the Superintendent of a famous Californian course denying that his greens were 100% Poa annua because they spent so much money every year in overseeding them through the whole season with Penncross. Management will swing the grass type not over-seeding which benefits only the seeds firms.

Austere traditional greenkeeping is guaranteed to reduce though not totally eradicate Poa annua but where the cause has been persisted in for many years it takes longer and in the process unless steps are taken to keep them informed members may revolt. Success depends on bringing them with you but from an early stage they will get better winter playing conditions with less disease. This is something that the feed and water brigade should take on board, especially as the coming recession starts to bite, especially as such methods cost less both directly in reduced "input" and indirectly in minimising disease and thus expensive controls.

Until we can educate golfers, especially the new entry into understanding that the correct colour for a golf course is not lush television green but the natural browner shades of our natural courses it is going to be an uphill battle and those in the front line deserve the support of all the golfing authorities and the golfing media in the fight to retain our traditional standards and all weather golf. I am more than willing to enter into debate with any informed people or bodies. We can always disagree without being disagreeable. Over some 55 years of advisory work I have seen hundreds of over-fed Poa courses come back to fine grass dominance and gratifyingly erstwhile culprits advising or selling excessive NPK fertilisers, reverse their views. I wish more would follow their example.

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In fact if you do not want Poa then never apply any autumn fertiliser. If any course is not at its best in autumn then it never will be and applying fertiliser is counter-productive. The same applies to "micro-nutrients" or trace elements for which on normal greens there is no evidence of need whatever. We are told that sand based greens need this help. If the advisers mean pure sand greens then they may have a case but they clearly do not!

In any case how many pure sand greens still survive? Do not confuse them with standard perched water table sandy green.

My advice regarding potash is to apply a light dressing in spring perhaps every two to three years, or subject to analysis showing levels below 10 - 15 ppm. Remember that

Secondly, all use complete NPK fertilisers or heavily use potash as well as nitrogen even if they do not use phosphatic fertilisers, while they will often apply fertilisers in autumn. I cannot see any justification for applying fertilisers (sulphate of iron is not a fertiliser) in autumn, because if any course is not looking at its best then it never will and all that fertilisers do then is to encourage disease and Poa annua.

Of course the battle against Poa annua is not confined to banning P & K, though that is the first essential. Aeration must be intensive and above all avoid that common error of hollow tining in spring, allowing seeds of Poa easy entrance into the tightest of swards, excessively close mowing at any time of the year will bring in Poa and if greens need to be