

# Back to the



Penncross/  
USGA Spec.



## THE GREAT DEBATE

Rather as predicted, the continuing interest in the USGA Specification for constructing greens continues – perhaps even gathers pace. Following Consultant Agronomist Jim Arthur's thought-provoking views in our May issue, and to maintain editorial impartiality, we now publish two further views on a subject with legs; it'll run and run...

### From Gordon Jaaback:

It is obvious from Jim Arthur's article that there is still much controversy and apprehension over the merits and use of the USGA Specification. As an agronomist just four years in Britain I am loath to query his wealth of experience in this country – yet none of us in the technical, commercial or practical world of turfgrass can override sound scientific fact seen in the correct context.

Today, with the rise in professional sport and the added boost through the media, the demands on high quality grassed surfaces are much greater than ever before. Wear is heavier and consequent compaction on them is more severe. Furthermore, as Jim Arthur maintains, play is extended or often concentrated – particularly golf, rugby and football – into a winter season which differs markedly with the harsh extremes in the North American continent, where snow cover or continual freezing prevents play and enforces a period of dormancy. Yet this in itself should not prejudice the use of USGA Specification in Britain.

It is not my theory that is offered – it is the basics of turfgrass science, soil physics and hydrology, which should be the foundation of any turfgrass programme.

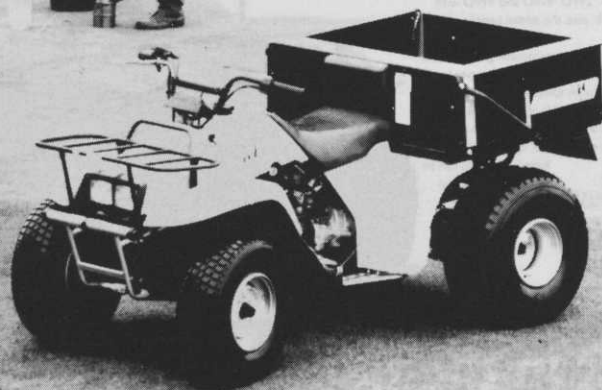
On the matter of USGA Green Section golf greens:

1: I am sure Jim Arthur acknowledges that the specification has no relevance to the choice of grass species – it was developed to overcome physical problems in golf greens and is based on scientific data on the movement of water in soils and their physical properties. The main concerns were compaction, poor internal drainage and the need to get the landing ball to 'bite'. Since these problems occur everywhere the game is played, the specification will have an application in every location.

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# grass roots

2: Initial research by Dr Marvin Fergusson on behalf of the USGA confirmed the minimum criterion for essential rootzone properties, namely permeability, water retention, porosity and bulk density. Hence a laboratory evaluation should be a requirement prior to the selection of the rootzone mixture. Whether sand/peat, pure sand or the 'fen' soil recommended by Jim Arthur for the rootzone mixture, it must meet the criterion prescribed.

3: Contrary to Jim Arthur's viewpoint, water demands by turf grasses in tropical countries do not warrant different rootzone specifications. Warm season grasses have adapted to the greater heat stress and provided the rootzone has the tested minimum water retention capacity it will retain adequate water – the water amount further increased due to the 'perching' phenomena. It is not copious watering that is then required – it is frequent light syringing that is of real benefit in such instances. There are instruments available that can be helpful in monitoring minimum watering needs.

4: Grass will germinate well on most soils including pure sand, even in the UK – the absence of organic matter at the onset is not a vital issue – and the difficulties during establishment can be overcome by frequent light irrigation, covering with inexpensive clear plastic sheeting or mulching during the critical germination period.

5: It is essentially the finer fractions of clay and silt that give the rootzone medium its inherent water retention capacity (referred to as 'buffer' in the article). The considerable organic matter produced by the grass plant also drastically reduces the permeability in the green and contributes markedly to the increase in water retention.

6: As stated by Jim Arthur, a good drainage installation is a prerequisite. While he maintains a preference for 40mm stone (a 100mm layer of 6-10mm stone has proved adequate in most situations in the UK and overseas and can be adequately spread with a small tracking machine) there may be reasons for its use, but research work into the use of filtering materials concludes that the overlying medium should not have an average particle size of more than 5-7 times smaller than the underlying medium. This would apply to the rootzone material overlying the filter or 'blinding' layer as well.

7: Certainly there is scepticism over the success of creeping bentgrass in this country. However, authorities in the breeding of the improved strains maintain that with good management and care it will survive well here. Where management is lacking or soil conditions are unsuitable – and either one or both are generally responsible – it will suffer, but by the nature of its stoloniferous growth, if properly cared for it can be as aggressive as any improved strains of bent grass or fescue. In the past three years Collingtree and East Sussex National have shown that maintenance of good swards are possible and so surely it cannot be condemned for all situations.

Greenkeeper International fully confirms the need for a scientific approach to growing high quality turfgrass and yet so many Clubs follow an established programme with little or no flexibility and virtually no foresight in meeting the problems that can be expected before they arise. If the greenkeeper is motivated he can soon learn from the wide

range of published research data which is freely available.

● *The writer, Gordon Jaaback, BSc Agric., is a member of the American Society of Agronomy and the British Society of Soil Science.*

## From Chris Nicholson:

May I comment on Jim Arthur's article of May last, based on my experiences in Australia, where I have spent the past two years constructing sand based greens and maintaining them with much loving care.

I can confirm that such greens sown with Pennncross are not the sort that can be maintained on a 'normal' small to medium Club budget, rather they demand intensive maintenance, linked with chemical warfare, a first-rate irrigation system, a vast stable of equipment – most of which is foreign to British greenkeepers – and a fully trained and motivated staff of 20 or more. In addition it helps to have a fully equipped workshop and a resident mechanic on site.

A great many courses have had pure sand greens sown with Pennncross put into use by constructors/specifiers and are then maintained like an average course in the UK. A few seasons later the Pennncross is nowhere to be seen – more the result of lack of know-how and low budgets than the Australian weather.

Those entering into this kind of construction without fully understanding the high cost of maintenance do so at their peril.

I think that golf course consultants are often to blame for the mistakes that have and continue to be made. Some have never worked on a golf course, let alone constructed one, and when they tell a farmer that they can design and construct a course with greens sown with Pennncross that will be just like Augusta, they conjure up in the farmer's mind a vision of an Augusta at Nether Wapping or some such place. Failing to explain the high cost of maintenance is nothing short of criminal.

Whilst on the subject of golf courses, many hundreds of which await planning consent as I write, it seems every farmer who owns a JCB wants to build a course these days. 'Old Ted', who once played on the local pitch & putt, will act as consultant during construction and the farm labourer of some 30 years standing, who has a rusting Flymo in the shed, will be the greenkeeper! Like the rest of the proper greenkeeping fraternity, my advice would be 'stick to farming' and let the real experts deal with golf courses.

● *The writer, Chris Nicholson, is the new course manager at Pinner Hill Golf Club.*

**Footnote: Dr James Beard, speaking recently at a seminar given to British golf course architects, suggested that the USGA spec, whilst meeting most of the known criteria for rootzone properties, has resulted in US lawsuits being brought upon architects and substantial settlements have been paid. With full blessing from the USGA he is currently writing a bulletin which modifies the spec somewhat and this will be known as the Texas Specification. In the interim, he suggests that their 1973 specification, or that appearing in his own manual, more accurately meets the desired specification, the 1989 specification having had the rootzone collar eliminated from the design. The Texas Specification will be published in the autumn.**



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