

Annual meadow grass

The debate continues

Independent turfgrass agronomist Neil Baldwin adds to the debate by giving the reasons why he believes annual meadow grass has no place on a putting green.

Ever since the first principles of greenkeeping were established, the colonisation of golf greens by annual meadow grass has been at the forefront of discussion. In fact there has probably been more debate revolving around this grass species than on all other topics relating to fine turf maintenance combined. Whilst certain agronomists are totally opposed to annual meadow grass and see no place for it within golf greens whatsoever, others are non-committed and take the 'easy' middle ground and yet more say it has a place and a role to fulfil.

The recent expansion of golf and increasing numbers of courses being constructed has led to many people offering their services as 'agronomists' and these people, usually those without any real technical training or experience have in fact spread much misinformation, resulting in a confused and misinformed greenkeeping industry. Thus, it is the aim of this article to present some of the basic facts relating to annual meadow grass, its biology and its characteristics relating to its suitability as a turfgrass species. In this way it is hoped that the basic record on annual meadow grass may be restored and this article may be presented as a true no-nonsense record of annual meadow grass in fine turf.

Annual meadow grass has been studied intensively and its biology has been reviewed several times from 1937 onwards. But only last year was an overview of chemical control of annual meadow grass published. Thus, it is inappropriate for this concise

Growth characteristics of annual and perennial biotypes of <i>Poa annua</i>		
	Annual biotype <i>Poa annua</i> var. <i>annua</i> L. Timm	Perennial biotype <i>Poa annua</i> var. <i>reptans</i> (Hauskins) Timm
Life cycle	Mostly annual but sometimes biennial	
Growth habit	Erect, compact bunch type growth	Low growing. Spreads by prostrate stolons and tillers
Flowers	Panicles are open with dense seed formation	Panicles are open with sparse to moderate seed formation
Tiller number	Variable. Low in spring and high in autumn	High. Produces secondary tillers. More stable growth.
Rooting	Few adventitious roots	Numerous adventitious roots
Seed dormancy	Will germinate after dormancy of two or more months	Can germinate within three days of maturity on the plant

article to even attempt to rewrite everything that is known, but certain relative facts are given as its biology relates to fine turf management.

Annual meadow grass may occur in golf greens in many different forms (biotypes) ranging from true annuals to a handy perennial form. The annual form (*Poa annua* ssp. *annua* or *erecta*) seeds rapidly, usually within two months after germination and then dies. The perennial form (*P. annua* ssp. *reptans*) is slower growing, has a creeping growth habit, seeds more slowly and may overwater. In UK golf greens both forms may be found together, as

well as intermediary types but in the majority of cases it is the perennial form that dominates. Thus, we are really dealing with a perennial form of a grass with 'annual' in its name!

Now we have defined the plant we are dealing with, we can discuss its suitability as a component of fine turf.

There are several reasons why annual meadow grass is not favoured as the ideal grass for fine turf. Turf is often judged simply by its colour. A bent/fescue sward is able to maintain its dark green colour year round which is in contrast to annual meadow grass which may naturally pale to

a yellow green colour especially when under stress due, for example, to drought or cold temperatures. Its prolific seeding in late spring can give a white appearance to the surface.

However, during a limited period, annual meadow grass may have an adequate appearance, but as golf is an all-year-round sport it must be said that annual meadow grass provides a poor surface from the visual stance. From the playing viewpoint annual meadow grass is present in virtually every golf green countrywide and so it is difficult to be exact as to how it compares to 100 per cent bent/fescue swards. However from our knowledge of annual meadow grass and how it affects the surface we can come to the conclusion that it is detrimental to the playing quality of the green for the following reasons:

1. Due to its growth habit, annual meadow grass often occurs in clumps or discreet patches. Thus, in combination with the different growth habits of bent and fescue, it may produce a bumpy uneven sward.
2. Annual meadow grass produces thatch much more rapidly than bent/fescue, which can become waterlogged to produce a soft surface more prone to pitch marks and also a surface that has a slow speed.
3. Annual meadow grass is by far the grass most susceptible to attack by fusarium patch and anthracnose diseases.

These are the principal disadvantages with annual meadow grass. I make no apology by starting from the negative viewpoint as, in my opinion, these far outweigh the advantages of annual meadow grass being a species that can provide at least some form of cover on the poor compacted soils present on many greens and also is capable of taking and recovering from wear.



Colonisation of a thin turf surface by annual meadow grass

Top picture: A 100 per cent annual meadow grass sward in winter. Note the pale colour in contrast to the green fairy rings in the foreground

Bottom: Fusarium patch scars in late winter on an annual meadow grass sward



From what is known about the conditions that favour annual meadow grass, certain cultural practices have been developed to favour bent/fescue and reduce annual meadow grass at the same time. Lowering the turf pH for example by making applications of acidifying fertilisers can create conditions more favourable to maintaining bent/fescue as these grasses can grow at lower pH's than annual meadow grass.

Also there is strong evidence that excessive amounts of phosphate are present in many golf greens and that annual meadow grass is favoured by a readily available source of phosphate. In the long term, eliminating phosphate applications will help to reduce the annual meadow grass content. However, it must be remembered that phosphate persists in the turf profile and it is used very slowly, so creating low levels of phosphate may be a long process. There is also a strong

link between annual meadow grass colonisation and excessive watering. Automatic watering systems should be used carefully and judiciously, not simply because they are there and it's not raining! The importance of thatch reduction and relief of compaction by mechanical aeration cannot be over-emphasised as it is important in favouring bent/fescue and discouraging annual meadow grass.

In conclusion, we have seen that annual meadow grass has many disadvantages, and it is the author's view that it cannot make a reasonable putting surface all year round as the demands of the game of golf dictate. The way forward must be to formulate a management plan that favours bent/fescue and discourages annual meadow grass. If this is implemented then a look to the future should see annual meadow grass decline gradually and finer grass take their rightful place.

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