

GRASS



Agronomist JIM ARTHUR gets back to basics in part two of his report on the benefits of grass identification

Last month we dealt with the triumvirate of those mainstays of good golf and good greenkeeping – bents, fescues and the meadow grasses. The latter, though less than ideal, is sadly the dominant grass on many of our older courses. Now we come to the rest – which it is helpful to identify if only to pin-point management or ecological problems.

Of course there are many more than three grass species found on golf greens, let alone fairways. There are also, however, some very undesirable species. Luckily, where they do occur, they are easy to identify, though less easy to eradicate. The first undesirable is perennial ryegrass (*Lolium perenne*). Its dark green leaves, with very shiny, polished, glossy, undersides and the red basal leaf sheaths, often (but confusingly not invariably) visible when the lower leaves are pulled back, makes identification easy. In passing, there are two other grasses with polished undersides to leaves and maroon basal leaf sheaths. These are the annual (biennial) Italian ryegrass and perennial meadow fescue (*Festuca pratensis*) – a tall 'arable' grass not the least bit like the small and wiry red fescues. Neither will bother you, since they are never found in close mown turf, though I did once find a practice ground growing a silage crop of meadow fescue, supplied by an agricultural seeds merchant as a bent/fescue mix!

Another grass, which can be confused with ryegrass, is crested dogstail (*Cynosurus cristatus*), again with stiff fibrous dark green

leaves with very shiny undersides. The chief identification point is that the leaves come off at right angles to the stems and the leaf base is a deep golden yellow. Both these species, but especially dogstail, have such tough fibrous leaves that they are difficult to mow cleanly and often strip between blade and sole plate, leaving very characteristic skinned or shredded, discoloured, ragged-ended leaf blades. Dogstail and ryegrass incidentally are now less common 'contaminants' of golf greens, but on older courses, past overseeding or 'head' patching (even divotting) with ryegrass (because it was cheap) left a legacy of disaster. Walter Woods at St. Andrews has spent many years plugging and even turfing areas of the Old Course greens which were so contaminated in the 1920s and 30s, though such heinous practices have long since been stopped.

Crested dogstail was sometimes included in fairway seeds mixtures but the difficulty in mowing and the resultant crop of wiry stems (whinnel straws) soon discouraged that idea.

There is, in fact, no place for ryegrass or dogstail on any golf course, certainly not greens or fairways. Yet on one course built recently, the inexperienced architect, having ploughed in the ryegrass-dominant grassland of the old farm land, sowed the new fairways with a ryegrass mixture! Will some architects and seedsmen ever learn?

Claims made for the virtues of so called dwarf ryegrasses need to be treated with great caution. The problem in using ryegrass on tees is that one almost always ends up with tufty patches or individual plants of ryegrass contrasting with lower growing annual meadow grass growing between them.

Another grass which is often common and disfiguring but very easy to identify is Yorkshire fog (*Holcus lanatus*). This bleaches with frost, giving quite whitish patches in winter. The leaf sheaths are striped lengthways, mauve and pale green, and the leaves are very hairy and prostrate. It is this feature which makes it easy to control, as the plants picks up more than their fair share of selective weedkiller (or sulphate of iron) and so full strength herbicidal treatment will usually eliminate it – plus verticutting, which penalises the broad prostrate leaves more than it does bents and fescues. I have even found spot-treating patches

with an aerosol herbicide spray very effective.

There are many other grasses, some with agricultural value such as the pale flat stemmed cocksfoot and others native to less fertile areas and moorland, which can be found on golf course fairways, while the rough can be a veritable grass museum. It will only confuse the beginner to try to cover all these species, though I would recommend an excellent Pan book of photographs of all the grasses by Roger Philips on Grasses, Ferns, Mosses and Lichens, which will help identification through flowering heads.

There are a few 'golf course' species, however, which can cause confusion. The first is early hair grass (*Aira praecox*). This is a very short lived ephemeral, seeding and then dying – very early – even in March and surviving droughty summers as seed. It has fine needle leaves and many a greenkeeper has been misled into thinking that thin, droughted greens were filling in, in the autumn, with self-seeded fescues when the mass of fine leaved plantlets were in fact *Aira praecox*, doomed to set seed and die early the next year.

As a matter of interest, not all grasses survive summer stress or perpetuate themselves through seed. One of these is another short lived native of thin linksland in the south east, viz *Poa bulbosa*, which produces little bulbils at the base of the stems, and when the plant dies in drought the bulbils survive in dormancy until the autumn rains. Similarly, another grass,

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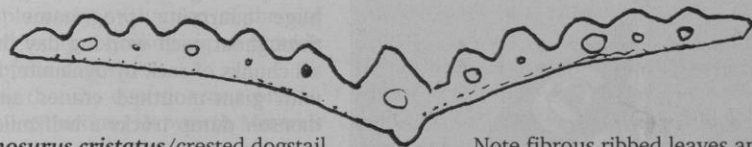
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IDENTIFICATION

CROSS SECTIONS OF LEAVES



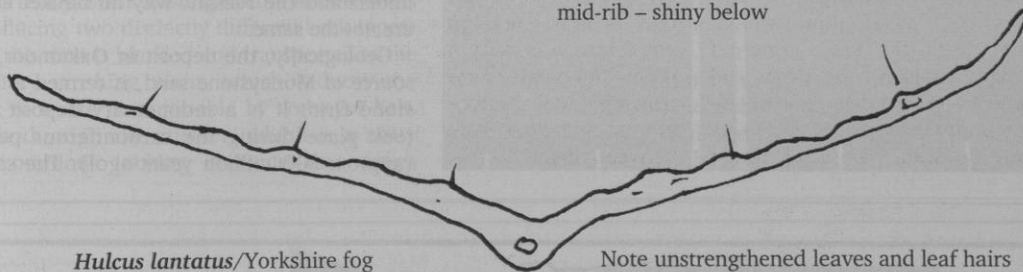
Cynosurus cristatus/crested dogstail

Note fibrous ribbed leaves and pronounced keel – shiny green below



Lolium perenne/Perennial ryegrass

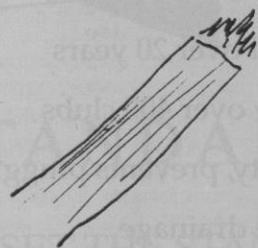
Note similar fibrous leaves and pronounced mid-rib – shiny below



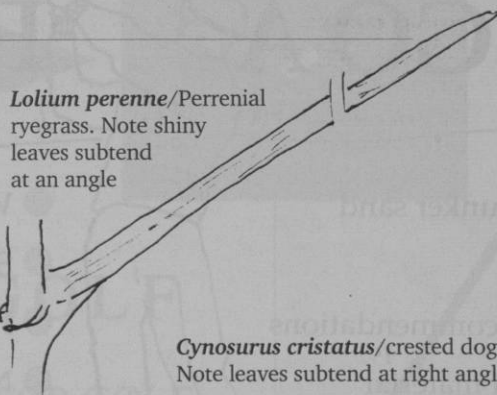
Hulcus lantatus/Yorkshire fog

Note unstrengthened leaves and leaf hairs

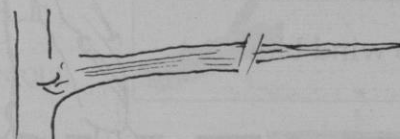
LEAVES



Lolium perenne/Perennial ryegrass
Note fibrous leaves stripped, not cut cleanly



Lolium perenne/Perennial ryegrass. Note shiny leaves subtend at an angle



Cynosurus cristatus/crested dogstail.
Note leaves subtend at right angles

viviparous fescue (*F. vivipara*) found on northern moorlands produces small spikelets, not seeds, and these drop off and grow when weather conditions are more favourable.

Another trap for the unwary is toad rush (*Juncus bufonis*) which occurs under wet conditions e.g. on thatchy greens, growing happily under the blades of the mower. It has fine, solid, not folded, cylindrical leaves and seriously affects putting surfaces

because of its slightly tussocky growth. Luckily, it can be sprayed out with full strength selectives, if caught early when it is growing and before it seeds.

Field woodrush (*Luzula campestris*) is perhaps less frequently seen, especially as today's closer mowing and regular verticutting, let alone grooming, will control it, but its very hairy, broad, tapering, brown-tinged leaves distinguish it fairly easily from grasses.

Sheep fescue deserves a mention – again very rarely found on greens but quite common on some thin acid approaches. Unlike creeping red fescues, it grows as individual plants – a whorled not a creeping habit – and so produces a thin open turf, not acceptable by today's standards.

We might also mention tip shooting of *Agrostis* – under wet conditions (often it is an early indication of over-watering),

small individual plantlets are produced, probably as an alternative to trying to produce seed heads. These can be easily detached from the parent plant – and easily verticut out when small – but the spotted effect is as bad for appearance as it is for putting.

It is to be hoped that while all greenkeepers should know their basic grasses, some may be enthused enough to go grass hunting – at least the plants stay still to aid identification (which is more than one can say for rare birds).

It is worth noting however that there are very few natural monocultural stands i.e. single species, as opposed to sown turf – and even if you start with only one or two species, others soon come in. So long as they have comparable growth habits to our native fine fescues and bents, this does not really matter. Perhaps one could 'age' golf greens in the same way as one can estimate the age of a hedge, one species for every hundred years approximately, according to one authority. Certainly some years ago when I carried out a botanical survey of the Old Course greens at St. Andrews, I identified no less than seventeen different species or sub-species. Of course, management, good as well as bad, can encourage some and kill off others, and there is something to be said for not having all your eggs in one basket!

The situation is quite different where grass is grown 'artificially' – e.g. hydroponically-fed, sand-only greens in very hot arid climates – where nature has no say and ultra-severe climatic conditions restrain weed grasses (but not diseases!) from invading. Not much *Poa annua* in the Arizona desert! Here, whatever man proposes, the weather has the last word – shared perhaps with the golfer who is putting fine turf under extreme stress all the year round and often pushing desirable species up to and beyond their capacity to withstand the effects of constant traffic and constantly changing weather. It is no coincidence that in nature, without help from man, the first stage in such stressful conditions is for *Poa annua* to replace bents and fescues (e.g. on paths) and then for it to be scrubbed off, leaving bare ground.