Ragwort

an unusual and unwelcome weed of fine turf

Dr Terry Mabbett shares his intimate knowledge of Ragwort, in this month's L&D Feature

Ragwort (Senecio sp) is a lot of things but a weed of fine turf is generally not one, so it was surprising to see well-established rosette-stage ragwort plants in abundance on a tee of otherwise well-managed turf on a prestige golf course in Hertfordshire.

Greenkeepers are accustomed to seeing ragwort in the rough, on the margins of courses and even in the car park but not on the fairway let alone on tees.

After thinking about ragwort as a weed I am not totally surprised it can establish in fine turf just like its relative the dandelion, and especially since there was another unusual and related weed called bristly ox-tongue (Picris echioides) in equal abundance. Ragwort and bristly ox-tongue are not normally regarded as weeds of established fine turf because they should be eliminated by mowing. However like dandelion, which is an acknowledged weed of fine turf, they are members of the Asteraceae (Compositae) and therefore have many common traits. All produce huge numbers of seed, possess tap root systems and develop prostrate rosette habits in early growth stages with broad, light-blocking leaves which lay flat on the turf, all key factors for weed success in turf.

Despite its injurious weed status which is governed by nominally strict legislation swathes of golden ragwort still appear on set-aside agricultural land and railway embankments, showing the weed is never far away. With seed production potentials up to 150,000 per plant per season, and efficient wind-assisted fruit and seed dispersal (by pappus/parachute), it would not be surprising if some ragwort seeds found their way into fine turf. Moreover germination rate is high at 70% with seeds staying dormant for several years at least.

Perhaps more surprising is ragwort establishing in 'tight' and well managed fine turf cut frequently and treated with selective herbicides to control mainstream turf weeds like common daisy, white clover and dandelion.

This tee was clearly cut frequently to optimum height and showed evidence of selective weed control. There were only minute amounts of white clover and the occasional dandelion although the adjacent fairway supported large patches of white clover in flower.

Tees adjacent to high populations of ragwort (and bristly-ox-tongue) will be vulnerable to invasion with turf damage during teeing-off providing easily exploitable germination sites and niches. On the other hand the ultra tight and undamaged turf on golfing greens should avoid invasion. Indeed the green on the preceding hole, just 30 metres away and even closer to the railway, was completely free of ragwort and bristly ox-tongue and all other broad-leaved weeds.

You only have to look at ragwort's botanical relative the dandelion to see why, if given the opportunity, it can establish in fine turf. Dandelion displays a rosette of leaves flat against the ground positioned apical meristem (growing point) barely above soil level. Leaves are clipped during mowing but the growing point survives to produce more leaves. Leaves with a low-expand rapidly blocking light to the surrounding turf grass plants, allowing dandelions to establish at

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Well established ragwort on the tee, clipped though not killed off by mowing

Ragwort established just outside of the tee

Ragwort newly established on the tee and already surviving regular and appropriate height cutting

Bristly ox-tongue growing on the tee at the same frequency as ragwort to which it is closely related.

Ragwort is related to dandelion (shown here) with broadly similar characteristics to this acknowledged weed of fine turf.

A well established ragwort plant that has clearly exploited divot damage on the tea.

their expense. Its sturdy tap root system provides anchorage and food for survival during drought, and moreover a means of vegetative propagation.

During its early growth stages ragwort displays a similar rosette of leaves surrounding a low-set growing point that escapes the blades. Like those of dandelion ragwort leaves were clearly clipped during mowing but growing points survived to carry on growth. As in dandelion the tap root system will generate new plants following failed attempts to dig out plants.

Ragwort is essentially a biennial plant which dies after setting seed in its second year. But if ragwort plants are prevented from flowering, in this case by frequent mowing, they adopt a perennial life cycle like dandelion and continue to produce leaves until killed by herbicide. Dandelion is rarely a problem because it is one of the easier weeds to control using selective herbicides approved for use in managed turf, but any ragwort establishing in managed fine turf will present real problems.

Ragwort is not the easiest of weeds to control with herbicide. Moreover where approved herbicide recommendations exist they only cover non-selective herbicides used for total vegetation control, or selective herbicides approved for use in amenity grassland but not managed turf. Herbicide products approved for use on managed turf and containing active ingredients with known activity against ragwort do exist but you will not generally find ragwort listed in the weed control spectrum.

Only remaining option is to dig out the plants but ragwort will respond in the same way as dandelion by producing a new plant for every piece of tap root left behind.

Finding ragwort and bristly ox-tongue in fine turf is clearly unusual but there is probably good reason for this particular occurrence. This golf course is bounded along its entire length by a main line railway out of London. Both ragwort and bristly ox-tongue grow and flower in abundance on the embankment.

Railways are reticent about ragwort and there is much argument as to whether the railway is the recipient of seed from adjacent farmland or whether the railway donates the weed to everyone else.

Railways are prime targets for ragwort but not especially the native common ragwort (Senecio jacobea). Their biggest problem is with the Oxford Ragwort (Senecio squalidas), an exotic species originating in southern Europe which found the ballast used to support railway tracks an agreeable substrate close to the volcanic soils of its native Mediterranean home.

Many older golf courses have close historical and geographical associations with the railway

Only British botanists could call a 'foreign' weed the 'Oxford' ragwort but the name is not as perverse as it sounds. The species escaped from the Oxford Botanic Garden in the 18th Century and spread around the country along the railway tracks and is now classed as an alien invasive weed. a

This tee is just a few metres from the railway embankment, although it is not possible to distinguish between common ragwort and Oxford ragwort when plants are at the rosette stage of young vegetative growth. There is historically and geographically close connection and association between many older golf courses and railways which provided access to golf courses prior to widespread use of the motor car.

Ragwort is clearly not common as a weed in fine turf but its occurrence reinforces the adaptability of species which like ragwort grow to heights of one metre or more in unmanaged habitats but happily adapt to turf in spite of regular and frequent 'shaving and clipping' during mowing. Greenkeepers with golf courses in these vulnerable situations should certainly be on the lookout for unusual weeds of fine turf like ragwort and bristly ox-tongue.

Most greenkeepers will be confronted with ragwort elsewhere on the course or be under threat of invasion from adjacent land. As such they should know why ragwort is classed as an injurious weed and therefore requires potentially draconian control measures supported if not entirely backed up by long-standing legislation.

Both common and Oxford ragwort contain high concentrations of poisonous alkaloids potentially lethal to livestock and especially equines (e.g. horses, ponies and donkeys). As such ragwort is scheduled as an 'injurious weed' under provisions of the 1959 Weeds Act. Landowners have a legal obligation to control ragwort and prevent its spread. The Ragwort Control Act which came into force in February 2004 is a Code of Practice to enforce adherence and prevent spread. Defra (Department for Environment, Food and Rural Affairs) will enforce action where ragwort poses a high risk.

The new Code of Practice puts onus of responsibility on landowners and managers including local authorities, railways and the Highways Agency to have ragwort control policies in place. They should assess the risk on land they own and implement control policies on any land identified as being 'Medium Risk', and take immediate action on land identified as 'High Risk'. Failure to follow the code can be used as evidence in a prosecution under the Weeds Act. It all sounds scary but as yet there appears little if any measurable effect on the frequency and spread of ragwort.