

Avoid the Yarrow March

Dr Terry Mabbett looks at Yarrow, the turf weed with it all



Yarrow (*Achillea millefolium*) is a successful and serious weed of managed turf. By nature all broad-leaf plants in managed turf will display at least some of well-established turf weed attributes but yarrow has virtually the lot.

Underground stems (rhizomes) and surface spreading creeping stems which root at the nodes and like most members of the plant family Asteraceae (better known as Compositae) prolific seed production.

However, there is another key attribute related to its leaves and accounting for much of yarrow's

success and prowess as a weed of managed turf. Yarrow's waxy and finely divided fern-like leaves contribute to the plant's strong drought resistance and high tolerance to herbicide because the foliage is hard to wet and therefore difficult to adequately cover with spray.

Yarrow profiled

Yarrow is a ubiquitous perennial weed occurring in most types of grassland. The name yarrow is derived from the Anglo Saxon 'gearwe' or 'giewan' meaning 'to be ready' (because of its healing properties) and turf managers faced

with this weed should certainly be ready for a difficult time.

Yarrow flourishes on dry, sandy and undernourished soils, calcareous or slightly acidic in reaction. Along with white clover and cat's ear, yarrow is one of the most drought hardy of all turf weeds.

During long hot summers, yarrow will persist as broad green patches while most other plants, turf grasses and weeds alike, are dried out, brown and seemingly dead.

Beneath the soil lays a sturdy system of underground stems called rhizomes spreading laterally from the parent plant at 7 to



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long hot summers when turf grass is at its lowest ebb.

First glimpse of the flower heads makes many think that yarrow is related to wild carrot, cow parsley, pig nut, hogweed, ground elder and other 'sometime' amenity weeds belonging to the family 'Umbelliferae'. But closer inspection reveals a flat-topped inflorescence comprising a cluster of tiny daisy-like flowers each composed of many florets. This places yarrow firmly in the Asteraceae (Compositae) 'camp'. Individual flowers are 3-6mm across with white or cream coloured disc florets, and five pinkish purple ray florets. Like most other members of the Asteraceae, including dandelion and ragwort, yarrow displays high seed production with up to 6000 seeds per plant.

And the finely dissected fern-like leaves of yarrow give extra clues to its classification status because they resemble the feathery, lace-like and highly segmented leaves of other members of the Asteraceae such as scentless mayweed, corn chamomile, pineapple weed and ragwort. The alternative common name 'Milfoil' derived from yarrow's Latin name 'millefolium' literally means 'thousand leaf'.

In the wider environment

Yarrow in flower is a common sight on infrequently mown grass or waste ground but hardly so on well managed turf. Regular mowing ensures the white flat flower heads are rarely seen in sports and amenity turf. And this together with a late and relatively short flowering window covering June-September should help to curtail its spread. But the secret of yarrow's success as with so many other turf weeds does not necessarily lie in sexual reproduction and the setting and dissemination of seed.

Ground hugging rosettes of stalked basal leaves, which largely escape the mower blades, hide an efficient means of vegetative reproduction through prostrate stems which develop into soil surface creeping stems (stolons) that root readily at the nodes. In contrast leaves borne on flowering stems are without stalks. The tough and fine-cut form of the yarrow leaf minimises loss of water by evaporation.

Yarrow has healing properties and when the leaf segments are crushed they release a strong though not unpleasant aromatic smell claimed to provide at least one good use for this troublesome weed

in another time and place. Yarrow is claimed as excellent fodder for farm animals, and some dairy farmers encourage yarrow in their pastures to impart a pleasant taste to cow's milk and yarrow flavoured yoghurt thus made. Yarrow was popular as a cooked leaf vegetable in the sixteenth century.

Back to basics on managed turf

Back on the sports turf surface yarrow is notoriously difficult to control and a single application of herbicide is rarely sufficient to eliminate the weed. It's creeping, running stems root at intervals to produce large drought resistant patches of weed growth during hot and dry summers when turf grasses and most other weeds alike are stopped dead in their tracks. There is little that can be done because herbicide application is clearly not effective or advised during drought conditions.

When the rains resume in early autumn yarrow clearly has a head start over drought stricken grass and by late September turf grass swards may be riddled with the weed. The leaves are waxy which together with their finely divided structure makes them difficult to wet and cover with spray, as well as presenting a barrier to the entry of systemically acting (translocated) herbicide.

It is not a good idea to rely solely on herbicides for control of yarrow since the majority will struggle to eliminate this weed, especially with a single spray application. Carefully prise out isolated yarrow plants when they first appear and scarify (groom) the turf to raise the weed leaves prior to mowing. Nitrogen rich fertiliser in spring helps the grass to get a head start over yarrow.

Regular feeding and watering, especially during drought, maintains sward thickness and helps to suppress this aggressive weed. Round off the growing season with an autumn applied top dressing. Year on year persistence of yarrow indicates that turf requires at least a good tonic and more likely some serious soil conditioning or amendment.

Yarrow and herbicides

Most turf weeds are relatively easy to control with proprietary selective herbicides at standard dose rates and frequencies, but others are more difficult to shift. The situation surrounding yarrow and other hard to control weeds

20 cm a year and a deep fibrous root system which anchors plants securely in the turf grass sward.

This erect, tough and aromatic perennial is usually 30-60 cm high in uncut swards, forming ubiquitous clumps and patches on dry grassland, hedge-banks, roadside verges and waste places. That said yarrow can tolerate close mowing, readily adapting its growth habit in accordance with cutting height.

There are custom-bred varieties with yellow and pink flowers sought after by cottage garden enthusiasts. But turf managers are hardly enthusiastic about this 'dry-loving' weed which performs best during



MAIN PIC: As the season warms up and turf dries out so yarrow 'warms up' as well



TOP: Some dairy farmers encourage yarrow to produce pleasantly flavoured milk and yoghurt

ABOVE: Yarrow is a valued component of wild flower meadows in late summer

LEFT: Clearly severe drought conditions but yarrow still manages to flower

BELOW: Close up on conditions that allow yarrow to take over

BELOW RIGHT: Yarrow is usually the last weed left standing in drought stricken turf

is complex with various factors at work either on their own or in combination.

Thus weeds like yarrow which are difficult to control with herbicides may:

- Be hard to wet and cover with spray due to shape and disposition shape or surface properties of the foliage
- Present a barrier to herbicide penetration due to a wax bloom layer, a thick cuticle or hairs on the leaves or a combination of such surface properties.
- Be inherently resistant to herbicide due to aspects of natural metabolism like having specific enzymes that can detoxify a specific herbicide molecule.
- Have acquired resistance to specific selective herbicides due to their over use and abuse.

Product Labels of some single active ingredient herbicides claim control of yarrow but only by using the highest allowed dosage or repeat applications and often both.

Biggest and best clout is delivered by herbicide products containing two or more active ingredients, usually with completely different modes of action, but even these can come with some reservation over rapid and complete control of yarrow.

Fluroxpyr and florasulam in combination are acknowledged to achieve comprehensive control of weeds in managed turf, including those which are traditionally regarded as the most difficult to control. This combination has the benefit of using two 'modern' actives with completely different modes of action. Both disrupt the normal growth of broad leaved weeds, the former by mimicking the effect of auxins and the latter by inhibiting synthesis of branched chain essential amino acids the building blocks of protein.

Fluroxpyr is taken up by the leaves and florasulam by the roots also, and together with rapid

translocation in xylem and phloem means they can rapidly reach all growing points where their effect is felt. In spite of all these attributes control of yarrow is only defined as moderate in comparison to most other turf weeds.

Positive points for yarrow

As with other turf weeds there are positive sides to yarrow. Yarrow is a valued component of wild flower meadows providing a rash of striking white across the yellowing tall grass in late summer and ideal for attracting butterflies.

Some cavity nesting birds like starlings use yarrow foliage to line their nests and research in this respect with nesting tree swallows in North America showed that yarrow inhibits the growth of avian parasites.

The plant has a long history of use in herbal medicine including the ability to heal wounds. Indeed the Linnean name 'Achillea' is after 'Achilles' of Greek Mythology fame, and the foremost hero of the Trojan Wars, who is said to have first used yarrow to heal his soldiers' injuries.

A whole string of alternative common names such as soldier's woundwort, knight's milefoil, staunch weed and thousand-seal give credence to these claims. In antiquity yarrow was known as 'Herbal Militaris' because it would staunch the flow of blood from wounds sustained in battle.

In herbal medicine yarrow is recommended for fortification and decongestion as well as its anti-haemorrhagic properties, but a specific traditional recommendation for stemming blood flow and relieving toothache following molar extraction is of little consolation to the greenkeeper suffering the 'headache' of yarrow as a turf weed.

Or its use as a skin lotion to improve complexion and looks when this is the last thing yarrow does for fine turf.

