Weed management in grassland

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After the wettest summer since 1962, grassland weeds are set to proliferate over the next few weeks. Buttercups, dandelions and rushes all love wet summers as they are able to grow at the expense of grass (which does not grow as well in the wet). The dock, thistle and nettle won’t be found wanting either when it comes to taking advantage of poached fields and poor grass growth. All of the weeds mentioned have set plenty of seeds in your pastures and these seeds will readily germinate where poaching has occurred. So what weeds are likely to cause the most problems and what can you do to avoid these weeds taking over expensive grass?

How do grassland weeds affect your pastures?
High levels of weeds in grass swards not only reduce pasture’s nutritional value, but restrict grazing areas and restrict valuable grass growth, particularly in newly-sown leys. As well as the physical impact of weeds on your grassland fields, you are obliged to control certain weeds by the Noxious Weeds Act and as part of your Cross-Compliance obligations. In normal circumstances, low levels of weeds in pasture are of no consequence and their removal may not be cost effective. Certain grassland weeds have high levels of trace elements and also have environmental benefits as food sources to birds, invertebrates and small mammals. However, when weeds reach density levels of 10 to 20 per cent of the total sward, they will impact on either grassland quality or productivity. It is difficult to accurately assess the damage that weeds do, except where animal death or severe sickness is the result of plant poisoning (e.g. ragwort etc). UK research suggests that for every 1% ground cover by docks you can assume that pasture growth is also reduced by 1%. Certain weeds (e.g. thistles) discourage grazing by the nature of their prickly habit and can make hay and silage unpalatable.

What grassland management practices can I apply to reduce weed effects?
Management practices such as drainage, fertility, grazing, topping and mowing are very important when it comes to controlling weeds. All of these encourage the grassland to be competitive and dense. Remember – even though there is an abundance of weed seeds waiting to germinate, very few get the chance as the grass stops the light and other environmental signals reaching the buried weed seeds. As well as striving to have a competitive sward, the most effective non-chemical control method of grassland weeds is knowledge and understanding about the weeds themselves. It is surprising how effective and cheap you can control certain weeds just by knowing a little about how they grow and reproduce. So in this article I will concentrate on the main weeds that are common on good, productive swards and the key points which will help you control them and make the best use of the chemicals applied.

Ragwort
After docks and thistles, Ragwort is probably the most well known grassland weed due to its very visible yellow flowers in August and its poisoning characteristics. However, I still meet farmers who have lost animals due to Ragwort. It is a danger to all stock and the main symptom from Ragwort poisoning is cirrhosis of the liver. Although largely unpalatable, Ragwort may be eaten when green, particularly when other grazing is sparse. It becomes more palatable to animals when cut or sprayed as it releases sugars. Any control strategy should be based on the fact that Ragwort is a
biennial (lives for 2 years) and also that just because you killed it with a spray does
not mean it cannot harm livestock. Small numbers of ragwort can be effectively
pulled or dug up and safely removed. For larger numbers, sprays such as MCPA, 2,
4-D, Dicamba and Forefront, applied in the early spring, provide good control but
measures must be taken to avoid stock eating any dying or dead ragwort present.

Thistles
There are 2 main types of thistle and knowing one from the other is critical to
to controlling them effectively. Creeping thistle is the most widespread and troublesome
thistle. It mainly spreads by creeping roots which can be metres in length but also
spreads by wind-blown feathery seeds (July & August). To make matters worse, it
can grow new plants from small fragments of its roots thus appearing to explode when
reseeding is carried out. Yield losses of up to 15% have been recorded but they cause
most damage by preventing animals grazing around them.
The extensive root system of creeping thistle is its key mechanism of survival in your
fields. Frequent topping can reduce the root reserves but will seldom eradicate the
problem as root fragments can lay viable and dormant for years. Thistles emerge in
the spring at different times so topping is a useful tactic to even up the growth stages
before spraying. Chemicals such as 2,4-D, MCPA and dicamba reduce top growth
but do not translocate down to the roots. For more persistent control use Thistlex,
Pastor or Forefront but follow-up sprays will be needed.
In comparison, the Spear Thistle only spreads by seed albeit by a lot of seeds which
are designed to fly long distances by wind. Each plant lives for 2 years
(similar to Ragwort) producing a flattened rosette of leaves in year one and then the
familiar ‘tree-like’ structure in year two. Once controlled in the re-seed it rarely is a
problem in grazed fields except after poaching or other sward damage. Topping is not
effective to control the growth in year one but can be carried out on the second year
growth before seed is set. However, the plant may re-grow the following year once
again requiring topping. Chemical control options are the same as for Creeping
Thistle.

Docks
Docks are the most common and troublesome weed in grassland. Docks have
everything going for them in terms of surviving in your fields. They are perennial
(live many years), have a large root system, produce many hardy seeds and are very
opportunistic in terms of where they germinate. For a dock seed to germinate, the
amount of light reaching the soil surface is the main factor as moisture and
temperature are usually adequate. Open swards or swards after cutting facilitate this.
Also in silage fields, the level of potassium may be in over-supply for the needs of the
grass thus favouring the higher needs of the dock. Teagasc recommends that soil
potassium levels should be maintained at index 3 (101-150 mg/l). This strategy will
also reduce the competitiveness of docks in your grassland sward and facilitate
effective chemical control. Research in Johnstown Castle has shown that dock seeds
do not survive being ensiled (due to low ph) but can survive passing through the
animal’s intestine so the type of fodder and way it is preserved may be important in
their spread.

Dandelions
These can also reduce the overall value of a pasture if allowed to establish. The key to
dandelions is to watch out for them after poaching etc as they are only spread by seed.
Once established, dandelions develop a large tap-root but unlike docks, creeping
thistles or buttercups, will not propagate from their root system. One thing I have
found about control of dandelions is that they catch farmers by surprise each year. The trouble is that dandelions flower once they get one warm week in March and usually before most people think of spraying them. Once flowered, it is very hard to get good control of the root system. Products based on Fluroxypyr and aminopryalid offer the best chance of translocating into the roots. Recent Canadian research has shown very effective control of dandelion by a bio-herbicide based on the fungus Sclerotina. This product has been recently commercialised for lawn weed control.

Soft rush
This is the most common of the many rush species found, usually on wet and neglected pastures. It has become more prominent during the recent wet summers of 2008, 2009 and 2012. It is recognised by the dense tuft of brown flowers coming from the side of the stems and a continuous white centre (pith) when the stem is peeled back. Soft rush is mainly spread by seed but can also spread by underground stems (rhizomes). Rush control is based on a combination of fixing soil problems and removal of the initial infestation with herbicides. Soft rush can be controlled with MCPA or 2,4-D, applied in June or July when growth conditions are good. Cutting and removal of the rush about three weeks before spraying will give the best results. Follow-up drainage/management is essential if long-term control is required.

Buttercups
Buttercups can establish from the seed bank with new grass, and where gaps occur in the sward. Once established, creeping buttercup, the most common species, spreads by creeping and rooting runners. Meadow buttercup and bulbous buttercup are also perennial, but do not spread by runners. Creeping buttercup is relatively prostrate and is a particular problem in less vigorous, heavily grazed or poached, damper and even wet grassland. It is often a severe problem in horse paddocks where grazing tends to open the sward. It is not generally grazed by stock, but some grazing may take place where there is insufficient grass, and it has some nutritive value, but also some toxicity to stock when large quantities are eaten fresh, but it is palatable in hay. The presence of creeping buttercup probably has a direct effect on grass yield and reduces the value of hay. Meadow buttercup is the tallest flowering of the buttercups, and prefers damp meadows of reduced grass vigour. Bulbous buttercup has a swollen stem base and prefers neutral or alkaline drier grassland, again of low grass vigour. As with the other buttercups, they are not preferentially grazed by stock and have some toxicity when fresh, but are palatable in hay. These species are usually associated with herb-rich hay meadows where fertility and grass vigour are low.