

Grassland Weed Control

Adoption of an Integrated Pest Management (IPM) approach where cultural control methods are considered before the use of pesticides is essential to sustainable weed control in grassland. A competitive sward will compete with weeds and leads to an overall reduction in weed infestation.

Recommendations

Use of pesticides should be the final piece of an overall IPM plan.

Simple IPM measures that should be considered;

- Growing more grass will limit space for weeds,
- Ensure pH, P & K are at optimum levels,
- Limit poaching,
- Identify underlining causes of waterlogging and put drainage in place,
- Topping weeds before they go to seed.

Docks

- Best control of docks will be achieved in good growing conditions when docks are actively growing and nutrients are actively being transported to new foliage and roots.
- If seed stalks are seen on the plant or if the dock has diseased leaves or is under pest attack it is better to cut/top or graze and allow re-growth of the docks before applying chemical.
- Do not apply chemicals in a period of drought as the chemical will not be taken up by the plant leaves in sufficient quantities.
- Use the highest water rates on the manufacturer's label for best effects.
- Allow adequate time between spraying and cutting silage for the herbicide to work.

Season Long Control

- Use of herbicides based on **aminopyralid, dicamba, triclopyr, fluroxypyr**, etc., will give at least season long control (possibly 2-3 years significant reduction in numbers and re-growth of docks) plus a wide range of common grassland weeds.
- Where clover is of consequence Eagle or Prospect may be applied. These products do not harm clover but Prospect may have some effect on the constituent grasses in the sward. These are best applied in good growing conditions and will give season long control. Use highest label rates where rootstocks are well established.

Teagasc trials have shown that longer term (up to 5 years) control of docks can be achieved by applying a suitable herbicide (e.g. Hurler @1.5 l/ha) onto small docks shortly after re-seeding. By applying the herbicide at this stage of the docks development, facilitates almost complete elimination of the docks. The trials have also shown that docks that emerge in the following years rarely establish due to competition from the grass – basically the grass (chlorophyll) absorbs sunlight (far infra-red part of spectrum) thus the dock seed does not get the correct light signal to germinate.

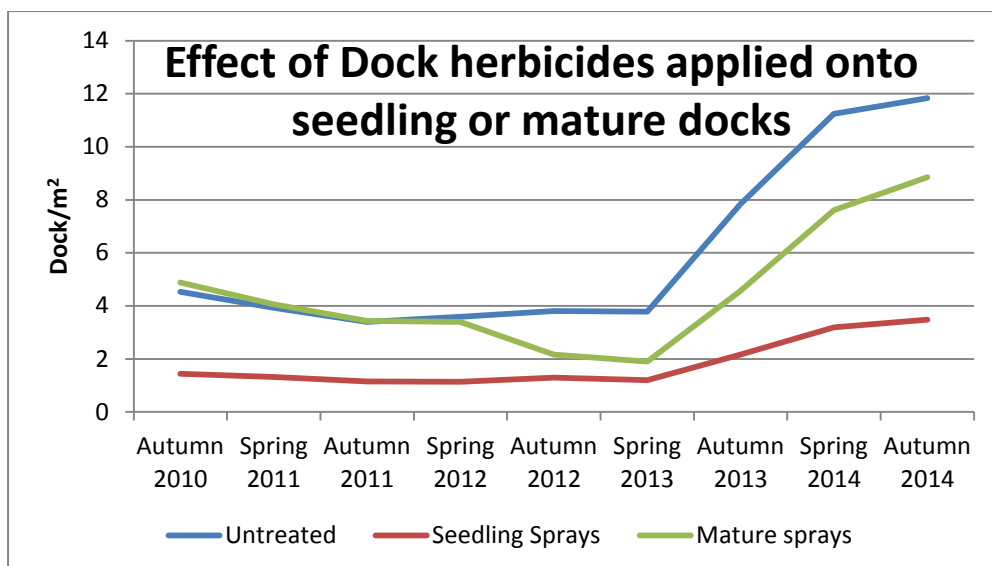


Figure 1: Control of Docks over a 5 year period

Table 1: Herbicides for Dock Control in Established Grassland

Products	Chemical	Rate/Ha	Comment
Eagle	Amidosulfuron 75%	40-60 g	Controls both broad leaf and curled docks. No effect on clover. Should not be used in very dry weather.
Prospect	Thifensulfuron-Methyl	22.5g/Ha	Does not affect Clover but may retard grass growth in certain conditions. Does not control Curled-leaf dock. Allow 7 days after application of Prospect before cutting or grazing.
Forefront T	Triclopyr Aminopyralid	2.0 L	Apply at rosette stage. Also controls a wide range of weeds incl. thistles, nettles, ragwort etc. Should be applied on grazing ground only.
Doxstar Pro	Fluroxypyr + Triclopyr	2.0 L	Good long term control of docks, not cleared for reseeds. Not clover safe.
PastorTrio	Fluroxypyr + Clopyralid + Florasulam	2.0L	Controls many weeds such as chickweed, fat-hen, mayweeds, buttercups, docks and thistles. Not clover safe.
Envy	Fluroxypyr + Florasulam	2.0L	Additional control over straight fluroxypyr where temperatures fluctuate. Strong on chickweed.
Binder/Hurler & various	Fluroxypyr	2.0 L	Controls Dandelions, Nettles and established Docks.
Uproot	Triclopyr 2,4-D ester	2.5L	Controls docks, nettles, thistles, buttercups and dandelion.
Lupo	2,4-D + MCPA	4.0 L	Controls Ragwort, Rushes, Thistle, Buttercup, Nettle, and a broad range of weeds with suppression of broadleaf and curled Docks.

Thrust	Dicamba + 2,4-D	3.5 L	Includes high rate of Dicamba and 2,4-D. Excellent control of Ragwort, broadleaf and curled Docks and a wide range of weeds incl. Buttercup, Nettle, Thistle etc.
--------	--------------------	-------	---

Other Grassland Weeds

It is difficult to assess accurately the damage weeds do to pasture output except where death is the result of plant poisoning from bracken, ragwort or hemlock. Other weeds such as thistles, nettles, rushes and dandelions can also interfere with grass and animal production and should be eliminated as soon as possible.

Bracken is poisonous in the green state and the young green shoots are particularly so. Over the years many herbicides have been used on this weed but Asulox* or Roundup are the most effective. The optimum time of application is end of June to mid-July when the expanded fronds are tender and actively growing. *Check PCRD website to check if Asulox has been approved this season.

Ragwort is poisonous in the green and preserved state and has been responsible for many animal fatalities.

- Normally animals do not eat ragwort in pastures unless grazing is extremely restricted while research suggests that an animal must consume up to 12 % of the animal's body weight to cause problems. However where ragwort is present within finely chopped silage; animals are forced to eat it causing most fatalities.
- Ragwort becomes more palatable to animals when cut or sprayed, as it releases sugars.
- 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, Thrust and Forefront provide good control but measures must be taken to avoid stock eating any dying or dead ragwort present.
- Best time to spray ragwort is before the flower stem elongates. Take note that the larger the ragwort the longer it takes for the carcass to rot down and not be cut in silage.

Hemlock is one of the most poisonous grassland weeds. Its poisonous alkaloid is coniine and is very virulent while also being dangerous to man and animals. It can be controlled with fluroxypyr or Aminopyralid or any of the dicamba based sprays.

Creeping Thistle is a perennial plant and grows mainly from an underground stem or rhizome and this makes total control difficult with one spray.

- Yield losses of up to 15% have been recorded but they cause most damage by preventing animals grazing around them.
- Frequent topping can reduce the root reserves but will seldom eradicate the problem as root fragments can lay viable and dormant for years.
- This weed is best sprayed with Thistlex, Forefront T, MCPA or 2, 4-D in June before flowering and may need a second treatment later in the season to control any late shooting thistles.

- In a reseed, both root fragments and seed can cause an explosion of creeping thistles.

Spear Thistle only spreads by seed.

- Each plant lives for 2 years (like 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 is rarely a problem in grazed fields except after poaching or other sward damage.
- Topping is not effective to control the growth in year one of their lifecycle (as the thistles are under the cut level) but can be carried out on the second year growth before seed is set.
- Chemical control options are the same as for Creeping Thistle.

Perennial nettle tends to grow in clumps in pasture and can prevent grazing.

- The growth pattern of this weed makes it an ideal target for spot treatment with one of the dicamba/triclopyr/fluroxypyr/aminopyralid based products.
- If the clumps are small and not too dense some of the dicamba based products will also contain them if sprayed on a regular basis.
- High water volumes (400 l/ha) are essential when spot treating.
- Treat before seed production for best effects.

Soft rush is the most common of the many rush species in this country.

- Draining of such infested areas is essential if any herbicide programme is to be successful.
- 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.
- A wetting agent can improve the spray sticking to the slender rush 'target'.
- Ideally, keeping animals off treated areas allows the grass to recover and prevent new rush seeds from establishing.
- MCPA is the most frequently found pesticide in drinking water and all precaution should be taken during application.

Dandelions are a perennial weed with a deep taproot.

- They primarily spread by seed and can reduce the overall value of the pasture if allowed to establish.
- In small amounts, MCPA or 2, 4-D will keep them at bay but where long term control is required the aminopyralid/fluroxypyr/dicamba based sprays are best if applied in the summer or early autumn.

Table 2: Herbicides for Grassland Weed control

Weed	Herbicide	Dose	Remarks
Ragwort	2,4-D (500g/L)	3.3 L/ha	Keep stock off until all ragwort is decayed and animals cant graze it
	MCPA (500g/L)	2.7 L/ha	
	Lupo	4.0 L/ha	
	Thrust	3.5 L/ha	
	Forefront T	2.0 L/ha	
Thistles	MCPA 500g/L	2.7 L/ha	Apply in warm weather.
	Lupo	4.0 L/ha	Apply when thistles at
	Thistlex	1.0 L/ha	

	Forefront T Farmco Thistles	2.0 L/ha 1.0L/ha	25cm tall or across.
Nettles	Fluroxypyr (Binder) Forefront T	2.0 L/ha 2.0 L/ha	Spray in good conditions. Use 400 l/ha water.
Rushes & Buttercups	MCPA 500g/L 2,4-D Lupo	2.7 L/ha 3.3 L/ha 4.0 L/ha	Cut and remove rushes before spraying re- growth. An adjuvant will improve control of rushes.

Whelehan Crop Protection is recommending the use of Forefront T in grazing ground only. A farmer leaflet is attached to the collar of all Forefront cans. FYM and slurry from livestock fed silage/hay made from treated grass (sprayed with aminopyralid) should only be spread on land intended for grass, cereals or maize.

Weed control in new leys

- Apply after grass has three leaves and the clover has one trifoliate leaf.
- Generally apply 4-6 weeks after grass emergence.
- Good growing conditions are a must at application.
- Do not apply if grass stressed due to drought, pest attack, etc.

Table 3: Weed Control in a New Grass Ley

Trade Name	Clover Safe	Pack Size	Rate/Ha	Comment
LegumexDB Undersown CloveX Clover max DB Plus	YES	5 L	7 L/ha	Contains 2,4DB plus MCPA. Controls moderate levels of docks, thistles, etc and most annual weeds. Needs small actively growing weeds for best effect. Apply after 2 leaf stage of grass and from 1 leaf clover stage.
Farmco Undersown Embutone	YES	10L	4.5L	Contains straight 2,4DB. Modest weed control on its own. Mix @3.0L/ha with Triad to boost control of many weeds including chickweed.
Legumex DB + Traid	YES	5 L 5 tabs	5.0 L/ha + 10 g/ha	Best broad spectrum clover-safe option Apply after 2 leaf stage of grass and from 1 leaf clover stage. Add Traid to the tank first and then Legumex DB.
Binder, Hurler, Reaper, Hyflux, Echo Pro	NO	1 L	0.75 L	Contains Fluroxypyr. Best option for high numbers of docks, chickweed, dandelion, nettles. Limited use on thistles and buttercups. Apply from 3 leaf grass stage.

Envy	NO	1.5 L	1.5L	Contains Fluroxypyr +Florasulam. Additional control of many weeds compared to straight Fluroxypyr, esp buttercups. Also useful where temperatures fluctuate. €40/ha
Pastor Trio	NO	2L	1L	Contains Fluroxypyr, clopyralid & Florasulam. Controls docks, thistles, chickweed, shepherds purse, charlock. Good all-around option. Not allowed after August 31 st .

- Cutting/grazing restrictions may need to be extended to allow for poisonous weeds e.g. ragwort
- Water rate generally 200 - 400 L/ha.
- Follow label when applying all plant protection products.