



GrassmanshipTM

GOOD GRASS MATTERS



Grow a better tomorrow



10% WEEDS = 10% LESS GRASS = ↑ COST

MORE INFORMATION ON **PAGE 4**



THERE ARE EFFECTIVE SELECTIVE HERBICIDES THAT KILL WEEDS WITHOUT KILLING YOUR CLOVER.

MORE INFORMATION ON **PAGE 7**



GRASSMANSHIP IS A PROGRAMME FEATURING A PORTFOLIO OF PRODUCTS THAT OPTIMISE GRASS PRODUCTION TO GIVE FARMERS MORE DM/HA.

MORE INFORMATION ON **PAGE 11**

EVERY €1

SPENT ON WEED CONTROL CAN DELIVER

UP TO €17 VALUE

MORE INFORMATION ON **PAGE 5**



TIMING IS EVERYTHING

Herbicides applied too early or too late will not work as effectively, if at all.

MORE INFORMATION ON **PAGES 5 & 6**

GRASSLAND WEED CONTROL



Whilst weed control in arable crops is normal practice, in grassland it is less common. Survey data suggests that little more than 5% of UK and Ireland grassland has a herbicide application in any given year, and few grassland farmers treat more than 10% of their pasture in any season.

Weed control is a key element of productive grassland farming and it is important that herbicide applications are effective, made safely and with care for the environment.

FIVE KEY REASONS TO CONTROL BROADLEAVED WEEDS IN GRASSLAND

1

Maximise Grass Yield

As a general rule, 1% ground cover of grassland weeds, such as Thistles and Docks, will reduce grassland productivity by 1%. If weed infestation is 10% or higher then severe yield losses will occur year on year unless a weed control programme is implemented.

2

Make Better Quality Silage

Weed infestations affect silage quality, particularly Docks and Thistles.

3

Better Grassland Utilisation

Grazing animals tend to avoid patches of weeds, especially thistles. As a result ungrazed grass around weeds reduces pasture utilisation.

4

Healthier Stock

Weeds pose a threat to livestock health. Injurious weeds such as Ragwort can result in illness and even death, particularly in cattle. Thistles can act as 'hypodermic needles' spreading diseases such as Orf in grazing sheep and lambs.

5

Extend Pasture Life

Broadleaved weeds allow less productive grasses to invade, particularly after cutting. This results in the reduction of desirable grass species and earlier renewal of the pasture is required.

What is weed control worth?

Controlling weeds from a 15% infestation level...

The extra profit potential is **€283/ha***

The payback (€ returned for € spent) for turning extra grass silage energy into milk is **12:1****

The payback for turning extra grazed grass energy into milk is **16:1**

The payback for using the extra grazed grass energy to replace concentrate is **7:1*****

*Based on Teagasc valuation of €185 per tonne of utilised grass dry matter.
Payback assuming milk value of €0.32/litre and *concentrate feed value of €300/t



Achieving ROI is linked to correct timing of application

DOCKS



THISTLE



NETTLES



WHEN SHOULD HERBICIDES BE APPLIED?



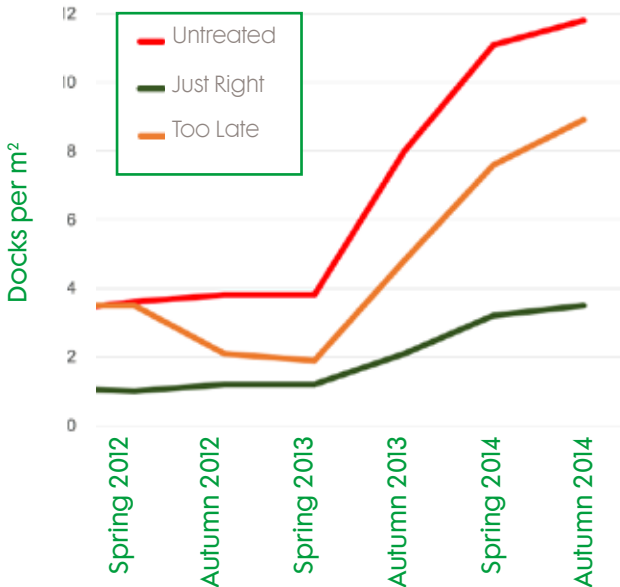
Generally, herbicides should be applied when weeds are healthy and actively growing, from seedling stage to just before flowering. Weed growth stage varies by species so check the label.

The herbicide needs to be taken into actively growing leaves and transported around the plant; once stem extension starts, leaf growth is insufficient for the herbicide to work effectively. If stem and seeds are present, top the weeds and spray the regrowth a few weeks later.

Spray docks when they are actively growing in the summer months when they are free of disease, pest attack, drought. The key to success is to apply the herbicide to the docks when they are big enough and growing.



Effect of herbicide applied to 'just right' timing or 'too late' on docks



'Adapted from Teagasc Research, Ireland.'

WEED CONTROL IN NEW LEYS



Weeds in reseeded areas are best controlled when the grass is at the 2-3 leaf stage. Docks are one of the most critical weeds to control in reseeded areas. High populations of other weeds such as Fat Hen, Charlock, Chickweed, Redshank and Mayweed can cause problems. It is essential to control Docks at the seedling stage and this is achieved by applying a herbicide before the first grazing.

It is important to review the presence of White Clover in the reseed when considering herbicide choice. Embutone is a Clover-safe option in new leys for the control of seedling docks, creeping buttercup, creeping and spear thistle, Charlock, Fat Hen and Cleavers (see label).

Where Clover has been included in the reseed, CloverMax will control Docks, Creeping Buttercup, Fat Hen, Shepherd's Purse, Charlock, Thistle and a range of other weeds (see label). CloverMax should be applied from four leaves of the grass and one to two trifoliate leaves of the Clover.



WEED CONTROL IN ESTABLISHED GRASSLAND



In established and permanent grassland the six most common weeds in order of importance are Docks, Thistles, Nettles, Chickweed, Buttercup and Ragwort. Rushes can also be an issue. Thrust will effectively control five of these weeds, adding fluroxypyr will control the sixth, Chickweed. Where Buttercups or Soft Rush are a particular problem Lupro provides the solution.



GRASSLAND AND PRODUCTIVITY

1
TONNE

(UTILISED)
**GRASS DRY
MATTER**

= SAME ENERGY

1
TONNE

**BARLEY
FRESH
WEIGHT**

AND GRASS HAS A HIGHER
PROTEIN LEVEL

Yield from grassland leys declines over time due to less productive 'weed grasses' invading the sward, an increase in broadleaved weeds, flooding, poaching and so on. Introducing new improved grass species to these paddocks, through an on-going pasture renewal programme, markedly improves their productivity and consequently total farm productivity and profitability.

Reseeding can potentially almost double dry matter yields. The aim must be to produce at least 12 - 14t DM/ha and use at least 80% of it. When considering reseeding, look at the age of the sward and the percentage of sown species remaining. New varieties on average have been increasing yield by approximately 1% per annum.



THE VALUE OF RESEEDING

Reseeding with appropriate management could bring up to a 20:1 return on the investment over five years. This comes from the extra milk output potential that increased dry matter yield and energy bring from carefully planned and executed reseeds. Reseeding enables us to capture the benefits of modern grass varieties - yield and quality, and sorting out issues such as weediness, soil compaction and soil fertility. A key element to maximising this benefit is controlling weeds throughout the reseeding process.



THE VALUE OF CLOVER



Using clovers in reseed mixtures brings the potential benefits of reduced Nitrogen fertiliser inputs, swards with greater digestibility and quality protein content, enhanced autumn yields and better soil structure.

Red clovers bring these benefits to silage and white clovers to both silage and grazing. The challenge is the slower spring growth and potentially lower all-season dry matter yields, but clovers can bring benefits to parts or the whole grass growing system on farms that are focused on quality grass production and efficiency of input use.

RESEEDING FOR IMPROVED YIELD AND QUALITY

New varieties tend to give a longer growing season and offer more grass. Recent assessments on a farm have shown a DM yield in mid May of 2,700kg/Ha for a new sward, but only 1,100kg/Ha for the old sward. Newer varieties also tend to have a better response to nitrogen. Every 1kg N/ha will give between 15-25kg of grass DM.

Newer varieties will give better quality grass – higher digestibility, higher intake, higher protein. Perennial ryegrass will have a grazing value of 75D compared with weed grasses 55-65D. Increasing the D value of the sward by one unit should give up to an additional 40g DLWG (daily live weight gain) in cattle and 20g DLWG in lamb.

WATER STEWARDSHIP



Phenoxy herbicides are key tools in the control of grassland weeds. The level of a pesticide in drinking water should not exceed 0.1 parts per billion. These minute levels can be detected in water samples, so it is important to adopt effective Stewardship and observe the Best Practice Guidelines below.

Best Practice Guidelines

- Use approved products, applied by trained operators with current qualifications
- Spray when weather and soil conditions are suitable
- Don't spray if heavy rain is forecast
- Don't spray if there is a risk of drift
- Fill AWAY from drains and water courses
- Respect buffer zones and areas between water courses and treated area



WHAT IS GRASSMANSHIP?

Grassmanship is a programme featuring a portfolio of products that optimise grass production to give farmers a clear cost benefit through increased grass DM yield/ha.



Lupo

Thrust™

KYLEO®

EMBUTONE

CloverMax



2,4-D + MCPA

For perennial and annual broadleaved weed control in newly sown grass leys and established grassland.

Why Use?

- Flexible, robust product that can be used on established grassland.
- MCPA provides effective control of Thistles, Buttercups and Soft Rush.
- 2,4-D's main strength is Docks and Ragwort.
- From three leaf stage.
- No issues about chemical residues or contamination of manure.

BEST USE

Apply in a period of active growth before the grass reaches 25cm high in the spring or up to 25cm after cutting.

In dense crops, use a higher volume of water. Weeds yellowing, under stress or damaged will be less well controlled. Avoid grassland under stress especially drought, water logging, disease or insect attack. Topping Soft Rush in late spring prior to seed formation weakens the plant, which then has to regrow. If the regrowth is treated when the Soft Rush is about 15cm tall better control will be achieved. Good field drainage and management of acidity will also help eradicate this weed.

Notes

Clovers or other legumes present in the sward will be severely checked, but will eventually recover. Livestock must be kept out of treated areas for at least two weeks and until poisonous weed such as Ragwort have died and become unpalatable.

Label Information

Grassland Application rate	4.0 L/Ha
Maximum number of applications:	One per year
Time of Application:	In late Autumn or Spring - see weed tables. Clovers or other legumes present in the sward will be severely checked, but will eventually recover.
Timing of application:	April to August from the 3-leaf stage
Water volume:	200 - 400 L/Ha



For control of Docks, Thistles and Ragwort in established grassland.

**2,4-D +
dicamba**

Why Use?

- The top option for the control of Ragwort.
- Flexible, robust product that can be used on established grassland.
- The combination of the two actives give very effective control of the key grassland weeds.
- A highly cost effective treatment which can be used to control perennial and annual broadleaved weeds and as part of a Ragwort eradication programme.

BEST USE

Apply in a period of active growth before grass reaches 25cm high in the spring or up to 25cm after cutting. In dense crops, use a higher volume of water. Weeds yellowing, under stress or damaged will be less well controlled. Avoid grassland under stress especially drought, water logging, disease or insect attack. It is often better to treat young Ragwort in September before being frost hardened.

Further Advice on Ragwort Control

Ragwort must be no more advanced than the rosette stage. Ragwort is poisonous but also unpalatable to grazing animals. Once sprayed or mown it loses its bitter taste so it is very important animals are not returned to the field until the plant has fully decayed or become unpalatable.

This may take many weeks. Surviving Ragwort should be dug up. Eliminating Ragwort from a field may take several years as Ragwort seeds can germinate for many years.

Label Information

Maximum Application Rate:	3.5 L/Ha
Maximum Total Dose:	Grassland 3.5 L/Ha 7.0 L/Ha
Time Of Application:	April to September
Min Interval Between Applications:	Six weeks (amenity grassland)
Water Volumes:	Tractor mounted sprayer or quad bike mounted sprayer 100 - 400 L/Ha. For use in knapsack sprayer the minimum water volume is 200 L/Ha.

KYLEO®

2,4-D + Glyphosate

Kyleo is the unique solution combining 2,4-D and glyphosate for total weed control. With a new state of the art surfactant to maximise control of grass weeds and broadleaved weeds.

Why Use?

- Improved and faster control of docks, thistles, nettles and clovers.
- Quicker and more effective than conventional tank mixture with a lower dose of glyphosate/Ha.
- Rainfast in one hour and reliable in difficult conditions.
- Tallow-amine free adjuvant technology.

BEST USE

Annual grasses and broad-leaved weeds should have at least 5cm of leaf, or two expanded true leaves, respectively. Treat either before grazing/mowing when growth is 30-60cm, not dense and lacking mature seeds, or re-growth after grazing/mowing. Treat couch grass when it has formed three to four leaves and is actively growing. For grassland renewal treatment and re-sowing in July and August have proved effective.



Kyleo



Glyphosate and Adjuvant

Label Information

Maximum Application Rate:	5 L/Ha
Maximum Total Dose:	5 L/Ha
Time Of Application:	Annual grasses and broadleaved weeds should have at least 5cm of leaf or two expanded true leaves
Min Interval Between Applications:	n/a
Water Volumes:	200 L

Replanting Intervals	Delay if Ploughed	Delay if Direct Drill
Grass	7 Days	28 Days
Grass + Clover	14 Days	28 Days

CloverMax



A soluble concentrate containing 240 g/l of 2,4-DB + 40 g/l MCPA. For the control of a wide range of broad leaved weeds including charlock in wheat, barley and oats including undersown and direct re-seeds with clover.

**2,4-DB
+ MCPA**

Why Use?

- One of the very few products for weed control in newly seeded grass/clover leys.
- Broad spectrum of annual and perennial weeds controlled.
- Can be used in cereals undersown with red or white clover.

BEST USE

Newly sown leys: Apply to young grass leys when the grasses have at least four leaves and have begun to tiller. Where several species of grass are present the timing should be dictated by the slowest developing species. Applications before tillering may cause a temporary check to growth.

Direct re-seeds: Apply after the first trifoliate leaf has appeared but before the fourth on the majority of the clovers. This will ensure that weeds are at the susceptible stage. With red clover some leaf deformity may be observed but subsequent growth will be normal.



Label Information

Maximum Application Rate:	7 L/Ha
Maximum Total Dose:	7 L/Ha
Time Of Application:	In established grasses determined by growth stage of the weeds. Apply to young grass leys when the grasses have at least four leaves and have begun to tiller.
Min Interval Between Applications:	n/a
Water Volumes:	100-400 L/Ha

EMBUTONE



2,4-DB

A soluble concentrate containing 400 g/l of 2,4-DB. Embutone is a selective herbicide for use post-emergence to control broad-leaved weeds in Cereals, Grassland, Lucerne, and Clover.

Why Use?

- Clover Safe
- Can be used in new and established leys
- Annual and perennial weed control

BEST USE

Annual weeds will be best controlled if spraying is done while the majority of weeds are seedlings.

Perennial weeds should be sprayed during their period of maximum growth, usually when the flower buds are beginning to form. The response of perennial weeds to treatments are often variable with only the aerial parts killed, though often suppression will occur. The recovery of weeds will be reduced if the sward is growing vigorously at the time of treatment.



Label Information














Maximum Application Rate:	4.5 L/Ha
Maximum Total Dose:	4.5 L/Ha
Time Of Application:	Perennial weeds should be sprayed during their period of maximum growth, usually when the flower buds are beginning to form.
Min Interval Between Applications:	n/a
Water Volumes:	200-1000 L

WEED CHART

	Thrust	Lupo	Kyleo	Embutone	CloverMax
Buttercup, Bulbous*	√ √ (√)	√ √ √	√ √ √	√ √ √	√ (√)
Buttercup, Creeping		√ √ √	√ √ √	√ √ √	√ √ (√)
Charlock			√ √ √		√ √
Chickweed			√ √ √		
Dandelion			√ √ √		
Daisy			√ √ √		
Docks	√ √ (√)	√ √ (√)	√ √ √	√ √	√ (√)
Fat Hen			√ √ √		√ √ √
Horsetail	√ (√)		√ √ √		√
Knotgrass	√		√ √ √		
Mayweed, Species			√ √ √		
Nettle, Perennial	√ √	√ √	√ √ √		√ √
Ragwort	√ √ (√)	√ √	√ √ √		
Rush, Soft	√ (√)	√ √ (√)	√ √ √		
Shepherd's Purse			√ √ √		√ √
Volunteer Oilseed Rape			√ √ √		√ √
Wild Radish			√ √ √		
Thistle	√ √ √	√ √ (√)	√ √ √	√ √	√

√ √ √ Susceptible, √ √ Acceptable control can be achieved in ideal conditions, some regrowth may occur. Seedlings usually controlled. √ Some suppression of weeds. (√) is a half mark. The list of susceptibilities is for guidance only based on a whole range of UK sources and does not constitute a recommendation. Different species of weed are controlled at different optimum size and timings.

PRODUCT APPROVAL TABLE

Product		Actives	Established Grass	New Leys
Embutone	 	400g/l 2,4-DB		
CloverMax		200g/l 2,4-DB + 40g MCPA		
Kyleo		240g/l glyphosate + 160g/l 2,4-D		
Lupo		360g 2,4-D + 315g MCPA		
Thrust		344g/l 2,4-D + 120g/l dicamba		



Can be applied using hand held equipment



Clover safe (read label for more information)

Some of our products have approvals for use through hand held equipment. To safely and legally use this authorisation, the user must be PA1 (Safe use of Pesticides Module) and PA6 (Hand-held or Knapsack Sprayer Module) qualified.



Nufarm

Nufarm is an established manufacturer with over 100 years' experience. In the UK and Ireland, our focus has historically been in cereals but learning from our New Zealand farmers, we see an opportunity in the UK and Ireland to improve grassland production and deliver real value at the farm level. Active around the globe, we are uniquely positioned to share best practices, optimise product formulations and take new solutions to market with our distributor partners. We are currently investing in additional portfolio technologies and look forward to integrating them into our portfolio to deliver an even more robust solution to grassland farmers in the UK and Ireland.



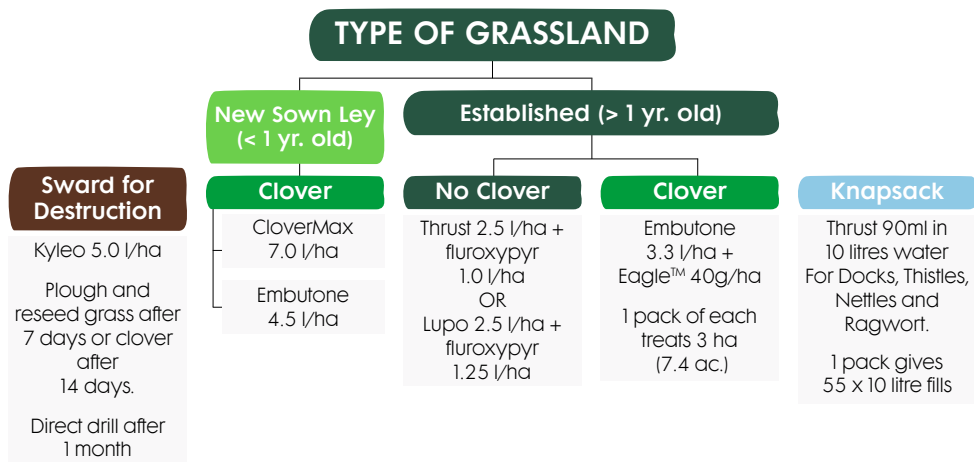
Further Information

For more information please visit www.grassmanship.com
or email grassmanship@nufarm.com

Details of application rates and timings are given in Nufarm labels and product literature; both of which can be accessed from our website www.nufarm.com/ie
Alternatively, ring the Nufarm helpline on 01274 694714, Monday to Friday 9.00 - 17.00.

Use plant protection products safely. Always read the label and product information before use. For label and safety information, refer to the Nufarm website www.nufarm.com/ie

Grassland Weed Control Decision Chart



						
Docks	Thistles	Nettles	Buttercup	Dandelion	Soft Rush	Ragwort
Thrust 2.5 l/ha + fluroxypyr 1.0 l/ha	Lupo 4.0 l/ha or Thrust 3.5 l/ha	Thrust 2.5 l/ha + fluroxypyr 1.0 l/ha	Lupo 4.0 l/ha or NU46 2.7 l/ha	Lupo 2.5 l/ha + fluroxypyr 1.0 l/ha	Lupo 4.0 l/ha or NU46 2.7 l/ha	Thrust 3.5 l/ha or Lupo 4.0 l/ha or D50 3.3 l/ha
Rosette stage, spring or late summer	Plants up to 50cm high, or regrowth post cutting	30cm high pre flower or regrowth	Treat autumn and spring pre flower	Up to 20cm diameter	Treat regrowth at 15cm tall post topping	Rosette in autumn and spring

Weeds must be actively growing at application.

Water volume = 200 l/ha Grazing interval = 2 weeks Cutting interval = 3 weeks

Ragwort must have completely died and become unpalatable

before re-introducing stock. Always read the product label.

Keep pesticides out of drinking water

Maintain a minimum five metre distance from streams and drains when filling or spraying

Kyleo contains: glyphosate + 2,4-D

Lupo contains: MCPA and 2,4-D

NU46 contains: MCPA

D50 contains: 2,4-D

Eagle contains: amidosulfuron

Thrust contains: dicamba + 2,4-D

Embutone: contains 2,4-DB

CloverMax contains: 2,4-DB + MCPA

Kyleo, Thrust, Lupo, Embutone, CloverMax and NU46 are trademarks of Nufarm UK Ltd.

Eagle is a trademark of Bayer Crop Science.

To find out more visit: www.nufarm.com/ie