



Grassland Agronomy Solutions



Grow a better tomorrow



Welcome to Nufarm's Agronomy Solutions.

Nufarm UK are bringing a variety of complete solutions to agronomic challenges within grassland. We aim to provide easy decision making for farmers, agronomists and spray contractors.

Grassland herbicides are a core part of Nufarm's business and we are proud to have a solution for every situation within the grassland sector.

Our Grassmanship programme has been very successful over recent years in deploying a portfolio of products that optimise grass production to give farmers a clear cost benefit through increased grass dry matter yield per hectare.

We now introduce Agronomy Solutions to help you make the best decisions on weed control and produce more quality grass, the cheapest form of feed.

Use plant protection products safely.

Always read the label and product information before use.

Agronomy Solutions: Grassland



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Agronomy Solutions: Product Profile Chart



	Active Ingredient	Formulation	Pack Size	Full Rate
Agritox	500 g/l MCPA	SC	10 litres	3.3 l/ha
CloverMaster	400 g/l 2,4-DB	SC	10 litres	4.5 l/ha
Kyleo	240 g/l glyphosate + 160 g/l 2,4-D	SC	15 litres	5.0 l/ha
PastureMaster	360 g/l 2,4-D + 315 g/l MCPA	SC	10 litres	3.5 l/ha
Rattler	540 g/l glyphosate	SC	15 litres	4.0 l/ha
SmartGrass	400 g/kg gibberellic acid (GA3)	WDG	80 grams	20 g/ha
Squire Ultra	75% w/w amidosulfuron	WDG	120 grams	60 g/ha
Sven	25 g/l esfenvalerate	EC	1 litre	300 ml/ha
Thrust	344 g/l 2,4-D + 120 g/l dicamba	SC	5 litres	3.5 l/ha
Tomahawk 2	200 g/l fluroxypyr	EC	5 litres	2.0 l/ha

Agronomy Solutions: Sward Destruction



CHALLENGE Complete destruction of old swards prior to reseedling

Nufarm Solutions

Option 1

Rattler 4.0 l/ha

Situation: Old grassland with unproductive grass species, rushes and bracken.
Timing: Apply to healthy green leaf during active growth (June-October).
Water Volume: 150-250 l/ha **Buffer Zone:** N/A
Grazing Interval: 5 days **Cutting Interval:** 5 days
Reseeding Interval: 5 days+ (check label for different sward types)

Key Benefits

Rattler is one of the best “straight” glyphosate products for destruction of grass species due to its 540 g/l Advanced Salt Technology formulation delivering two different forms of the glyphosate salt. It also has a state of the art surfactant inbuilt for optimum adhesion to waxy perennial grasses, rushes and bracken.

Option 2

Kyleo 5.0 l/ha

Situation: Old grassland with perennial weeds tolerant to straight glyphosate.
Timing: Apply to healthy green leaf during active growth.
Water Volume: 100-500 l/ha
Buffer Zone: LERAP B **Grazing Interval:** 5 days
Cutting Interval: 5 days **Reseeding Interval:** 1 month for direct drilled grass, clover, fodderbeet

Weed Spectrum:

Nettles	Thistles	Docks	Clovers
Brassicacae Volunteers	Perennial Grasses		

Key Benefits

Kyleo gives excellent control of perennial weeds that are difficult to kill with straight glyphosate products. The combination of 2,4-D + glyphosate + state of the art surfactant makes Kyleo the product of choice for destroying old swards full of perennial weeds and grasses.

Agronomy Solutions: New Sown Grass Leys



CHALLENGE Annual and seedling perennial weeds

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Option 1

PastureMaster 2.5 l/ha + Tomahawk 2 at 0.75 l/ha

Situation:	New sown grass ley.		
Timing:	April to August from 3-leaf stage of grass.		
Water Volume:	min 200 l/ha	Buffer Zone:	LERAP B
Grazing Interval:	2 weeks	Cutting Interval:	3 weeks
Overseeding Interval:	3 months	Clover Safe:	No
Weed Spectrum:			

Fat Hen	Chickweed	Small Nettle	Mouse Ear
Runch	Charlock	Seedling Docks	Thistles

Key Benefits

Controls a very wide weed spectrum up to 6 leaf stage. Ideal for spring and summer sown new grass leys. Particularly effective on large Fat Hen which most products leave behind.

Option 2

Squire Ultra 30 g/ha + Tomahawk 2 at 0.75 l/ha

Situation:	New sown grass ley .		
Timing:	Feb to 15th Oct. Applications after 30th June can only be made to re-sowing of permanent grass (PG01). Apply from 3-leaf stage of grass, and only when weeds are growing actively.		
Water Volume:	min 200 l/ha	Buffer Zone:	LERAP B
Grazing Interval:	1 week	Cutting Interval:	3 weeks
Overseeding Interval:	1 year	Clover Safe:	No
Weed Spectrum:			

Field Speedwell	Mayweed	Chickweed	Redshank
Small Nettle	Mouse Ear	Pansy	Seedling Docks

Key Benefits

A flexible mix, suitable for use in early spring to clean up overwintered new sown leys. Can also be used in the autumn where permanent grassland is being reseeded. Only 7 day grazing interval. Please note that this mix is not safe to clover.

Agronomy Solutions: New Sown Clover Leys



CHALLENGE Annual and seedling perennial weeds in new Grass + Clover Nufarm Solutions

Option 1

CloverMaster 2.5 l/ha + Squire Ultra 30 g/ha

Situation:	New sown grass/clover ley.		
Timing:	Feb to 15th Oct from 4-leaf (filling) stage of grass and 1 trifoliolate leaf of Clover. Applications after 30th June can only be made to re-sowing of permanent grass (PG01).		
Water Volume:	min 200 l/ha	Buffer Zone:	N/A
Grazing Interval:	2 weeks	Cutting Interval:	3 weeks
Overseeding Interval:	1 year	Clover Safe:	Yes - white clover only
Weed Spectrum:			

Fat Hen	Chickweed	Small Nettle	Mayweed
Runch	Charlock <4 leaf	Seedling Docks	Thistles

Key Benefits

An exceptionally safe mix to white clover. Controls Chickweed and a wide range of seedling weeds (2-6 leaf size). A good replacement of tribenuron in autumn re-sowing of permanent grass (PG01).



Agronomy Solutions: Silage Fields



CHALLENGE Docks

Nufarm Solutions

Option 1

Thrust 3.5 l/ha

Situation:

Silage cutting fields.

Timing:

April to September, actively growing Dock rosette stage or regrowth post cutting.

Water Volume:

min 200 l/ha

Buffer Zone:

5m arthropod buffer

Grazing Interval:

2 weeks

Cutting Interval:

minimum 3 weeks

Overseeding Interval:

3 months

Clover Safe:

No

Weed Spectrum:

Broad-leaved Docks	Curled Docks	Ragwort	
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Key Benefits

“Very safe to grass”. Increases silage production by reducing competition from Docks.

Improves silage quality. If large Chickweed is present, add Tomahawk 2 (see the mix for grazing pasture on next page).



Agronomy Solutions: Grazing Pasture



CHALLENGE Mixed Perennial weeds

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Option 1

Thrust 2.5 l/ha + Tomahawk 2 at 1.0 l/ha

Situation: Permanent grazing pasture.

Timing: April to September, actively growing weeds at rosette or at leafy regrowth post topping.

Water Volume: min 200 l/ha

Buffer Zone: 5m arthropod buffer

Grazing Interval: 2 weeks

Cutting Interval: minimum 3 weeks

Overseeding Interval: 3 months

Clover Safe: No

Weed Spectrum:

Docks	Thistles	Buttercup	Nettles
Dandelion	Cow Parsley*	Chickweed	

* sequential application may be necessary for Cow Parsley control.

Key Benefits

Better grazing quality and utilisation of grass. Increase stocking rates.



Agronomy Solutions: Established Grass with Clover



CHALLENGE Docks

Nufarm Solutions

Option 1

CloverMaster 3.3 l/ha + Squire Ultra 40g/ha

Situation:	Permanent grass with clover.		
Timing:	Feb to 15th Oct , actively growing docks at rosette or leafy regrowth.		
Water Volume:	min 200 l/ha	Buffer Zone:	N/A
Grazing Interval:	2 weeks	Cutting Interval:	3 weeks
Overseeding Interval:	1 year	Clover Safe:	Yes - white clover only
Weed Spectrum:			

All species of Docks			
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Key Benefits

One of the few solutions to control docks in clover. Very safe to white clover.

Option 2

Agritox 1.5 l/ha + Squire Ultra 40g/ha

Situation:	Established grass with clover (more than 1 year old).		
Timing:	March to 15th Oct, actively growing docks at rosette or leafy regrowth.		
Water Volume:	min 200 l/ha	Buffer Zone:	LERAP B
Grazing Interval:	2 weeks	Cutting Interval:	3 weeks
Overseeding Interval:	1 year	Clover Safe:	Clover may be checked but recovers by the following spring. Use on white clover only.
Weed Spectrum:			

All species of Docks			
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Key Benefits

One of the few solutions to control docks in clover. Good value per hectare.



Be Water Aware Protect your water



Use Plant Protection Products safely.



Ensure only certificated spray operators and equipment apply the products.



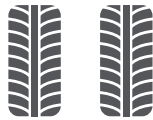
Observe all product buffer zone.



Clean and wash down your sprayer at the end of the day, well away from water bodies or open drains.



Do not fill or wash down sprayer in yard unless measures to collect washings for safe disposal in place.



Do not use on waterlogged fields, if tyre marks are visible the field is too wet.



Do not exceed the maximum application rate.



Do not use if rainfall is expected. Apply on a calm day when weather conditions are good.

Agronomy Solutions: Upland Pasture



CHALLENGE Soft Rush

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Option 1

Rattler 1 part in 20 water applied via Weed Wiper

Situation: Water catchment sensitive areas and waterlogged fields.

Timing: April to Summer, active growth, pre flowering.

Water Volume: See Weed Wiper directions

Buffer Zone: N/A

Grazing Interval: 5 days

Cutting Interval: 1 month, then remove dead stems

Overseeding Interval: 5 days

Clover Safe: Yes by weed height differentiation

Weed Spectrum:

Soft Rush	Thistles	Bracken	
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Key Benefits

Effective control of Soft Rush. Prevents herbicide residues in water. More available grazing.

Option 2

PastureMaster 3.5 l/ha

Situation: Upland Pasture.

Timing: April to Summer, active growth, pre flowering.

Water Volume: min 200 l/ha

Buffer Zone: N/A

Grazing Interval: 2 weeks

Cutting Interval: 4 weeks, then remove dead stems

Overseeding Interval: 3 months

Clover Safe: No

Weed Spectrum:

Soft rush	Thistles		
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Key Benefits

Effective control of Soft Rush using a boom sprayer. More available grazing.

Agronomy Solutions: Spot Treatment



CHALLENGE Docks, Ragwort, Thistles, Buttercup

Nufarm Solutions

Option 1

Thrust 90ml in 10 litre knapsack sprayer

Situation: Spot treatment of low density weed populations.

Timing: April to September, active growth, rosette stage or leafy regrowth post cutting.

Water Volume: 9.9l to 90ml product **Buffer Zone:** 5m arthropod buffer from boundary

Grazing Interval: 14 days **Cutting Interval:** min 3 weeks

Overseeding Interval: 5 days **Clover Safe:** No

Weed Spectrum:

Docks	Thistles	Ragwort	Buttercup
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Key Benefits

Cost effective method to control low populations of perennial weeds.

1 x 5 l pack of Thrust gives 55 fills of a 10 litre knapsack sprayer.

Best value spot treatment product available.

Agronomy Solutions: Paddock and Pasture



CHALLENGE Docks, Ragwort, Thistles, Buttercup, Plantain, Dandelion, Daisy

Nufarm Solutions

Option 1

PastureMaster 3.0 l/ha + Tomahawk 2 at 1.0 l/ha

Situation:	Overgrazed paddock and pasture.		
Timing:	April to September, active growth, rosette stage or leafy regrowth.		
Water Volume:	minimum 200 l/ha	Buffer Zone:	LERAP B
Grazing Interval:	14 days or until Ragwort has completely died and disappeared (may take 6 weeks).		
Cutting Interval:	min 3 weeks if no Ragwort present.		
Overseeding Interval:	3 months	Clover Safe:	No
Weed Spectrum:			

Docks	Thistles	Ragwort	Buttercup
Plantain	Dandelion	Daisy	

Key Benefits

Complete weed control spectrum of common paddock weeds including Ragwort. No manure restrictions. Allows growth of grasses for extra grazing. Treated paddocks can be grazed by horses or any type of livestock (see grazing interval).

Option 2

Thrust 3.5 l/ha

Situation:	Ragwort only.		
Timing:	Apply to Ragwort rosettes in Late summer/September.		
Water Volume:	200 l/ha	Buffer Zone:	5m arthropod buffer
Grazing Interval:	do not graze until Ragwort has completely died and disappeared (may take 6 weeks).		
Cutting Interval:	If autumn applied, wait until following spring before cutting.		
Overseeding Interval:	3 months	Clover Safe:	No
Weed Spectrum:			

Docks	Thistles	Ragwort	
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Key Benefits

Best option when Ragwort is the main target weed.

Agronomy Solutions: Insect Pest Control in Grassland



CHALLENGE Bibionid Larvae, Frit Fly and Leather Jackets

Nufarm Solutions

Option 1

Sven 300 ml/ha

Situation:

Newly sown autumn leys.

Timing:

Autumn application, ideally with rain after application.

Water Volume:

minimum 600 l/ha

Buffer Zone:

LERAP A and 5m
arthropod buffer

Grazing Interval:

14 days

Cutting Interval:

14 days

Overseeding Interval:

no restriction

Clover Safe:

Yes

Pest Spectrum:

Reduction in damage from Bibionid Larvae. May have some effect on adult Frit Fly and Crane Fly.

Key Benefits

Protects newly established leys from Bibionids (larvae of St Mark's Fly).

The only insecticide approved in grassland.

Likely to control adult Frit and Crane Fly if present at or shortly after application.

Agronomy Solutions: Rotational Grazing



CHALLENGE Early season grass growth during the cool temperatures of March/April

Nufarm Solutions

Option 1

SmartGrass 20g/ha

Situation:	Rotational grazing of cows or sheep on established grass (More than 1 year old)		
Timing:	Mid March - 30th April when grass commences growth. Apply within 3-5 days of stock leaving the paddock for best response.		
Water Volume:	minimum 200 l/ha	Buffer Zone:	N/A
Grazing Interval:	14 days	Cutting Interval:	-
Overseeding Interval:	no restriction	Clover Safe:	Yes

Key Benefits

Trials have shown increased grass production of 500+ kg DM/ha in 21 days.
Potential increased stocking rates. Potential shorter stock rotations.
Potential of retaining a paddock for silage.



Agronomy Solutions: TOP TIPS FOR BEST WEED CONTROL:



1. Perennial weeds are most vulnerable as seedlings in new sown leys (2-6 leaf).
2. Ensure that weeds are actively growing - avoiding cold, dry conditions.
3. Ensure that weeds are at correct growth stage - typically at rosette for established perennials.
4. Ensure that adequate water volume is applied - minimum 200 l/ha.
5. Spray quality should be Medium droplet size or use Low Drift Air Inclusion nozzles.
6. Ensure enough time between application and cutting - minimum 3 weeks but a full month interval allows best translocation to roots.
7. Spraying leafy weed regrowth post cutting/topping is very effective.
8. Spraying during the warm conditions of late summer is very effective before weeds die back.
9. Spot treatment is a great method of controlling low density weed populations (<5% cover).
10. Don't allow weed populations to re-group. Treat any survivors early next season.

Use plant protection products safely.
Always read the label and product information before use.

Agronomy Solutions: WEED CHART FOR NEW SOWN LEYS (<1 year old)



	PastureMaster 2.5 l/ha + fluroxypyr (200g/l) 0.75 l/ha	CloverMaster 2.5 l/ha + Squire Ultra 30 g/ha
Application Timing	April-Sept.	Feb-15th Oct*
Minimum stage Grass	4 leaf	4 leaf
Minimum stage Clover	-	1 trifoliolate
Clover Safe	NO	YES
SEEDLING WEEDS (up to 6 leaf):		
Bindweed sp.	•••	•••
Black Nightshade	••••	•••
Buttercup seedlings	••••	•••
Charlock	••••	••••
Chickweed	••••	•••
Cleavers	••••	••••
Cranesbill sp.	•	••
Dandelion seedlings	•••	••
Dock seedlings	••••	••••
Fat Hen	••••	••••
Forget-me-not	•••	••••
Fumitory	••	••
Groundsel	•	••
Hempnettles	••••	•••
Knotgrass	•	•••
Mayweed sp.	•	•••
Mouse-ear (common)	•••	•
Orache	•••	•••
Plantain	••••	•••
Poppy	••	•••
Red Deadnettle	••	•••
Redshank	••	•••
Shepherds Purse	••	••••
Small Nettle	•••	••••
Sowthistle (Prickly)	••	••
Speedwell (Field)	•	••
Thistle seedlings	••••	•••
Wild Radish (Runch)/brassicae	••••	•••

*Application after 30th June can only be made to re-sowing of permanent grassland (PG01)
 •••• = Best Control ••• = Good Control •• = Moderate Control • = Some Control
 (Indications only)

NOTES:





Nufarm

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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/uk.

Alternatively, ring the Nufarm helpline on 01274 694714, Monday to Friday 9.00 - 17.00 or contact your agronomist.

Some brand names used in this guide are trademarks of other manufacturers, in which proprietary rights may exist.

Use plant protection products safely.
Always read the label and product information before use.