



Catchment Sensitive Farming

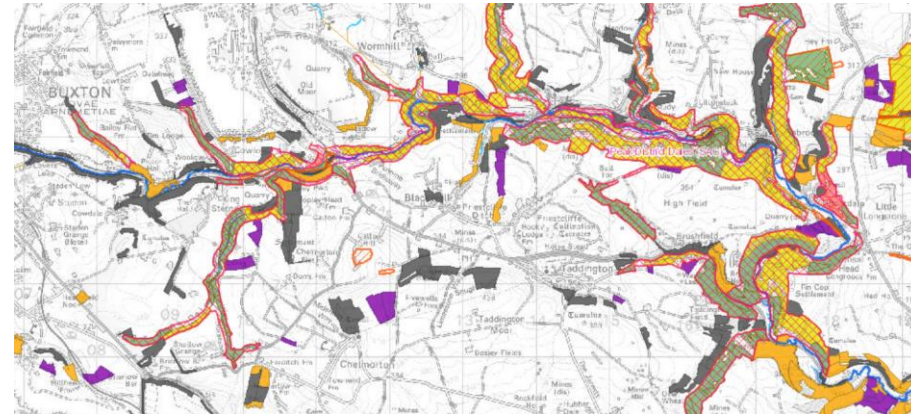
Working together for a healthy environment



Catchment Sensitive Farming (CSF) is led by Natural England, in partnership with Defra, the Environment Agency and the Forestry Commission.

Background to the White Peak Trials: 2019

- Limestone Dales; species rich SSSI grassland and SSSI River (Wye). Highly sensitive to pollutants; phosphate, nitrogen
- Adjacent plateau highly productive silt loam soils over free-draining limestone, mainly dairy with perennial ryegrass, slurry and up to 250kgN/ha = risk to the SSSI sites
- WP Trials began in 2019 as an informal partnership between Natural England /CSF, local farmers, Peak District National Park Authority, Severn Trent Water
- Aimed to look at more sustainable management of the plateau, boost biodiversity, mitigate and adapt to impacts of climate change, benefit water, air & soil quality
- Looked to develop more resilient farming systems
- Initial funding from Peak District NPA and latterly Severn Trent Water & CSF
- "Farmer trials" to innovate, remove barriers & demonstrate results, rather than formal scientific trials
- >60ha Herbal leys across 17 farms looking at different aspects of establishment and management.
- WhatsApp 35 members, plus monthly farm walks



Wye valley SSSI (coloured) & plateau (white)



Free-draining limestone geology



Wye valley limestone dale & river



Perennial ryegrass on the plateau

Herbal leys – win win for farming & environment?

- Trials looked at several different land management approaches, but herbal leys appeared to offer a win-win for both farming and environment
- Mix of grasses, legumes & herbs
- Work well as productive short-term leys
- Environmental benefits; soil condition, flood management, pollinators, lower carbon footprint & nitrate losses
- Key farming benefits (some interchangeable):
 - Grasses = energy
 - Legumes = N fixation & protein, anthelmintics
 - Herbs = minerals, anthelmintics, drought tolerance & soil health

1 Hectares Special Cutting 'Herbal' Ley (GS4)

6.88 kg (6.88) certified Lofa festulolium
5.63 kg (5.62) certified Calibra tetraploid perennial ryegrass
5.00 kg (5) certified Boyne perennial ryegrass
3.75 kg (3.75) certified Comer timothy
2.50 kg (2.5) certified Pardus meadow fescue
0.63 kg (0.62) certified Swai tall fescue
1.00 kg (1) certified Avisto red clover
0.63 kg (0.62) certified Altaswede late flowering red clover
0.25 kg (0.25) native Essex red clover
0.38 kg (0.38) certified Aurora alsike clover
1.00 kg (1) certified Luzelle lucerne - RHIZOBIUM INOCULATED
0.25 kg (0.25) commercial sweet clover
0.88 kg (0.88) certified Dublin white clover
2.50 kg (2.5) commercial Sainfoin
1.38 kg (1.38) certified Jose common vetch
0.38 kg (0.38) certified Leo birdsfoot trefoil
0.50 kg (0.5) certified Endurance ribgrass (plantain)
1.25 kg (1.25) Burnet forage herb
0.25 kg (0.25) Yarrow forage herb

35.00 kg per hectare

Early trial mix, targeting optimum diversity within a cutting regime

WP Seed mixes

- Seed merchants can advise on mixes suitable for local soils and intended management
- For small-scale trials (e.g. 5-acre field) it is worth trying a varied mix with high diversity to see what works locally – then tailor and adjust accordingly in future
- Diversity can bring resilience to changing seasonal conditions e.g. wet/cool, hot/dry
- SFI mix 1 grass, 2 legumes, 2 herbs
- Recommended 5:4:4 mix, <70% Ryegrass / Festulolium (by weight) and >25% Legumes & Herbs
- Typical seed rates: 12 to 16 kg per acre (30-40 kg per hectare), though some exceed this to help outcompete weeds and compensate for establishment challenges.

Derbyshire Herbal Ley	
KG	Variety
1.620	ABERGREEN (Int) Dip Per Ryegrass <i>Lolium perenne</i>
1.700	ABERZEUS (Int) Dip Per Ryegrass <i>Lolium perenne</i>
3.500	ABERGAIN (Late) Tet Per Ryegrass <i>Lolium perenne</i>
1.000	ABERROOT Festulolium
0.600	COMER (Early) Timothy <i>Phleum pratense</i>
0.400	DONATA Cocksfoot <i>Dactylis glomerata</i>
0.400	ESSENTIAL Tall Fescue <i>Festuca arundinacea</i>
0.400	LAURA Meadow Fescue <i>Festuca pratensis</i>
0.400	LOTANOVA Birdsfoot Trefoil <i>Lotus corniculatus</i>
0.800	SAINFOIN Onobrychis <i>vicifolia</i>
0.500	BOSTON Plantain <i>Plantago major</i>
0.400	YARROW Achillea <i>millefolium</i>
0.750	ALTASWEDE (Late) Red Clover <i>Trifolium pratense</i>
0.200	ERMU Alsike Clover <i>Trifolium hybridum</i>
0.495	ABERDAI (Med) W Clover <i>Trifolium repens</i>
0.675	ABERSWAN (Med/Large) W Clover <i>Trifolium repens</i>
0.165	ABERHERALD (Med) W Clover <i>Trifolium repens</i>
0.165	LIFLEX (Med) W Clover <i>Trifolium repens</i>
0.365	ROZETA Red Clover <i>Trifolium pratense</i>
0.365	GLOBAL Red Clover <i>Trifolium pratense</i>

A recent WP trial mix for two cuts plus late summer grazing

WP Trials – headline farming benefits

- Herbal ley paddocks on a dairy farm plate metered* 10–11 t DM/ha/year during 2023–25 without inorganic nitrogen fertiliser
- Herbal leys produced 10% less than the farm average in 2023, the most favourable growing conditions for ryegrass, but saved 173Kg/ha of nitrogen fertiliser
- They equalled or exceeded the farm average during the more challenging seasons of 2024 and 2025, whilst saving 138 kg/ha and 127Kg/ha of nitrogen fertiliser
- This suggests an element of production stability, valuable in years when environmental conditions reduce the response of perennial ryegrass to nitrogen fertiliser and increasing the resilience of forage-based systems.
- On-farm observations suggest a similar pattern for silage; first cut up to 20% less than fertilised ryegrass under favourable conditions, with second and third cuts similar - a 10% annual reduction, but without nitrogen fertiliser
- In dry summers, up to 50% greater second and third cut yields can maintain or increase annual DM production
- 40-80KgN/ha in the early spring (before legumes get going) may secure equivalent DM to fertilised ryegrass, saving money whilst retaining a resilient sward

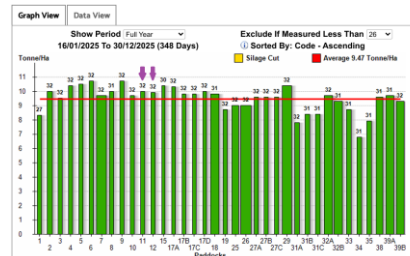
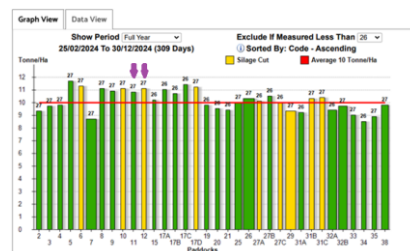
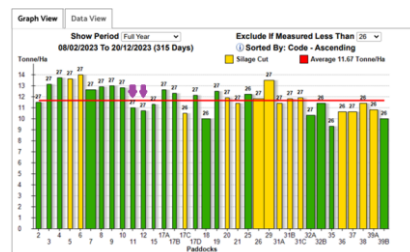


Plate metered DM production, 2023, 2024 and 2025, Herbal leys arrowed

N rate Kg/ha	46% Urea £185/t	46% Urea £481/t	46% Urea £1035/t
	40p/Kg	£1.05/Kg	£2.25/Kg
175	N fertiliser saving (£ per hectare)		
80	£0.43	£62.18	£176.18
40	£16.43	£104.18	£266.18
0	£32.43	£146.18	£356.18

Illustration of possible financial savings from reduced nitrogen fertiliser. Urea figures from AHDB.

Assumes £37.57/ha additional costs (seed / direct drill)

80ha platform @ 80KgN/ha = 6.4 tons nitrogen saved

80ha platform @ 40KgN/ha = 10.8 tons nitrogen saved

80ha platform @ 0KgN/ha = 14 tons nitrogen saved

* NB Plate meters have limitations for multi species swards

Headline farming benefits - forage analysis

- Multiple samples of fresh and conserved forage sent for full wet chemistry analysis, including ryegrass controls
- ME generally comparable to ryegrass, CP tends to be higher, certain minerals seem consistently higher – in line with scientific studies
- Farmer feedback; feeds better than it analyses. Likely effect of condensed tannins, PPO on by-pass protein
- DM % can be lower, important to wilt silage

Perennial Ryegrass (PRG) / Herbal Ley (HL)		1st cut PRG 7/6/21	1st cut HL - 07/06/21	2nd cut PRG - 02/08/21	2nd cut HL 02/08/21
Analysis					
Oil A (Ether Extract)	% DM	3.62	3.49	4.67	2.66
Total Oil (Oil B)	% DM	4.09	4.01	5.47	3.32
DM	%	23.5	23.2	28.7	25.6
Ash	% DM	7.66	8.19	8.36	9.77
NCGD (DM) (By Calculation)	%	63.5	69.5	61.2	63.4
Ruminant ME (DM Basis)	MJ/kg	9.9	10.7	9.9	9.7
Acid Detergent Fibre	% DM	31.19	33.02	32.72	37.07
Neutral Detergent Fibre	% DM	52.77	46.98	55.05	47.27
Lactic Acid	%	3.342	3.303	2.847	2.307
Calcium	% DM	0.55	0.82	0.59	1.33
Sodium	% DM	0.13	0.09	0.21	0.08
Magnesium	% DM	0.13	0.13	0.17	0.23
Copper	mg/kg DM	8.51	8.62	6.97	11.72
Iron	mg/kg DM	153.19	215.52	327.53	519.53
Manganese	mg/kg DM	93.62	77.59	87.11	66.41
Zinc	mg/kg DM	25.53	25.86	31.36	35.16
Potassium	% DM	2.26	2.33	2.65	2.15
Phosphorus	% DM	0.3	0.3	0.35	0.27
Crude Protein (N X 6.25) (Kjeldahl)	% DM	12.77	15.52	15.33	17.58

Wet chemistry analysis of perennial ryegrass and herbal ley silage from a system aiming for two large cuts.

Drought resilience; deep roots

- Deep rooting species such as red clover, chicory, plantain, lucerne, sainfoin, cocksfoot, festulolium and tall fescue bounce back quicker than perennial ryegrass in dry weather
- Second cut silage in dry summer of 2022 consistently yielded 50% more, in some cases double
- Ultimately not immune to drought but some evidence of an extra 7-10 days growth beyond ryegrass



Silage sward 10 days after cutting, August 2022



Silage sward 10 days after cutting, August 2025. Area with lower herb / legume cover circled yellow

Grazing & livestock performance

- Stock like it – will seek out & graze in preference to Ryegrass. Same applies for silage bales at the feed barrier.
- Chicory an acquired taste – can be bitter and seem to be varietal differences
- Lambs finish well & clean
- No drop in milk yield / constituents reported
- Rotational grazing important to maintain species – sheep are particularly liable to preferentially graze out the things they like best
- Longer rotation (4-6 weeks between grazes) with higher entry covers & longer residuals allows plants to recover and maintains species for longer
- Trade-off between short term production and longer-term resilience?
- Typically 7-10 days behind ryegrass / white clover – not always easy to integrate into systems set up around ryegrass
- Grazing in winter / wet can result in crown damage
- Can be issues with open / gappy swards in the winter, particularly where high levels of red clover & chicory



Milk cows grazing herbal ley, July 2021



Pre-grazing cover, August 2023



Post-grazing cover, August 2023

Herbal ley silage

- High-quality silage perfectly possible with care
- High protein and often lower dry matter %, so a good wilt is important **but** overhandling, particularly in hot weather, can lead to rapid crisping and loss of feed value through leaf shatter. Treat as for red clover silage
- Not mowing too tight (leaving an 8cm or 3" stubble) protects crowns and allows for quicker re-growth
- Mowing without a conditioner reduces damage to fragile leaf material
- Mow wide without tedding where possible. If tedding, follow the mower or utilise morning dew
- Wilt for 24-**48** hours depending upon weather conditions
- Watch for red clover leaf becoming dry and brittle
- Rake gently and harvest
- May be some benefit in a suitable homofermentative inoculant



Good stubble left at mowing



Crisped red clover after 24 hrs, July 2024



Non-conditioned / wide swath, August 2025



Herbal ley silage alongside ryegrass, November 2025

Chicory in silage leys



Mature chicory in flower



Younger, pliable chicory, just after bolting

- Lots of benefits and many WP farmers include in silage mixes, even where baled and wrapped
- Keep your eye on it and don't let get too mature / woody
- Mature stems can puncture wrap and often rejected at feed barrier (can also apply to red clover, lucerne and sainfoin)
- Precision chop for clamp, or use knives in baler (not as good)
- 3 layers film + 6 layers wrap usually enough if not too mature
- Take care dropping bales in the field due to stumps in stubble
- Ensure a good wilt as low dry matter percentage



Unchopped, mature chicory stem at feed barrier



Chopped & unchopped stem



Mature stem in stubble

The importance of good establishment

- Achieving advertised benefits depends on good establishment – the biggest factor in determining success. The difference in performance between poorly and well-established herbal leys can be dramatic
- Seed is more expensive than straight grass, or grass / white clover mixes
- Poorly considered site selection, ground preparation and time of sowing can lead to poor or patchy establishment and may result in “falling between stools” i.e incurring expense without benefits such as nitrogen fixation and drought resilience
- Exact species & composition depends on soil type, season & year (dynamic) but the better performing WP herbal leys tend to have;
 - 50-60% legume ground cover, including at least 10% red clover
 - 10-30% herb cover

Assessed at peak growth during summer (July/August)



Well established herbal ley, 11 August 2023

Establishment; the right sites

- Herbal leys can be of great benefit in the right places, but in the wrong places risk losing other features of environmental value – WP trials have been careful in navigating these risks
- Agricultural optimum: P&K indices >2, pH 6-7, low perennial weed burden – ideally after arable
- Environmental constraints: Priority habitat (e.g. species-rich grassland), archaeological features (e.g. SHINE) & protected landscapes. Many important sites are shown on magic.gov.uk, but not all
- Need to be aware of Environmental Impact Assessment (Agriculture) regulations – safeguards semi natural areas & unimproved land not cultivated within the last 15 years, which may have existing value
- If in doubt, contact NE for an EIA screening decision - 0800 028 2140. Email eia.england@naturalengland.org.uk
- Herbal leys under Agri-Environment Schemes are intended for **improved grassland** or **arable land**. They are not suitable for low input (unimproved or semi-improved) grasslands
- Sustainable Farming Incentive (SFI) defines suitable improved permanent grassland
- Usually has a high cover of Ryegrass and White Clover



Improved grassland dominated by perennial ryegrass



Species rich semi natural grassland, dominated by native grasses and herbs



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Establishment; the right sites

- Whilst generally not as valuable as unimproved grassland (particularly where species-rich) low input semi-improved grasslands are sometimes miscategorised as being improved
- Whilst having received some degree of agricultural improvement, such swards are unlikely to have been physically disturbed or re-seeded in many years and often hold some degree of existing environmental value (e.g. botanical, fungal, invertebrate, archaeological).
- Although there may be a moderate amount of ryegrass present, swards typically contain a high proportion of less productive native grasses, often with a cover of locally native common herbs (e.g. sorrell, selfheal, ribwort plantain).
- Good quality semi-improved grassland may be shown on magic.gov.uk, but most is unrecorded
- Can be identified by grassland survey e.g. NE "BEHTA" methodology
- Soil analysis can provide clues e.g. low P index of 0 or 1
- Low input unimproved and semi-improved grasslands offer other, potentially more attractive, opportunities than being converted to herbal leys
- SFI low input grassland action; CLIG3 (£151/ha) & GRH7 (£157/ha)
- CS Higher Tier; CGS22 (£646/ha), CGS21 (£528/ha), CGS23 (£157/ha) – by NE invitation only
- Various private sector opportunities



Low input, semi-improved grassland with a proportion of ryegrass but mainly less productive native grasses and some common herbs



Establishment; perennial weeds, soil, carbon

- First trials used full ploughed seedbeds, worked to a fine, firm tilth with small seeds sown shallow (5-10mm) and rolled well – classic approach resulting in excellent establishment
- However, broad-leaved dock seedlings quickly appeared – seeds are long-lived and seemingly weed-free fields can harbour a big problem in the seed bank, waiting for exposure to light
- Severe infestations are beyond spot treatment and have had to be sprayed with broad-leaved herbicide, resulting in complete loss of herbs and legumes (no completely safe broad-leaved selective herbicides for herbal leys)
- Trials have focussed on identifying clean ground (ideally land previously part of an arable rotation) and strategies to limit and control perennial weeds
- Strategies include reduced weed seed exposure (direct drilling) and opportunities for weed destruction (stale seedbeds, break crops).
- Overly deep or excessive cultivation can also disturb good soil structure and release carbon; trials have aimed for minimum disturbance required for good seed-soil contact



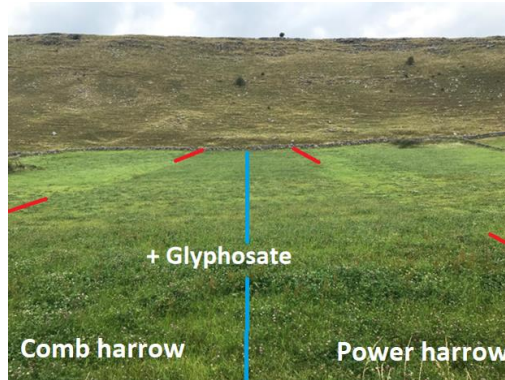
Well established herbal ley from ploughed seedbed, July 2021



Severe dock infestation, September 2021

Establishment; overseeding, min till, direct drill

- Multiple trials have attempted to establish herbal leys directly into a living sward, with variations in; surface cultivation (tine harrows, power harrows, discs), timing (early, mid, late season), grazing / silage, standing hay, disc and tine based direct drills, strategic grazing, higher seed rates of herbs & legumes
- Only ever partial success – the more cultivation for seed-soil contact and reduced sward competition the better.
- mainly the more robust or shade tolerant species (white clover, chicory and plantain) often in patches equating to bare soil
- Success greatly increased with the use of glyphosate to remove competition from the previous sward, particularly where direct drilling



Overseeding trial, 28 July 2021



Herbal ley direct drilled after glyphosate, 24 July 2025



Herbal ley direct drilled following standing hay (no glyphosate), 24 July 2025



Direct drilled after silage cut, tine drill, 18 August 2023



Germinated seed, 12 October 2023



Tine drilled silage sward 20 August 2024, poor herb & legume cover



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Direct drilling after sward destruction

- Several farmers favour direct drilling after sward destruction with glyphosate. This keeps weed seeds buried, maintains good soil structure, carries livestock better and is lower cost than a ploughed seedbed
- Appears to be most suitable for young grassland, open in the base (i.e. no thatch) with good soil structure, well aerated and good biological activity
- Glyphosate removes competition from the existing grass sward
- Some farmers use lime before drilling with the aim of reducing surface acidity as the previous sward decays
- Important to remove trash; some treat the standing crop at around 3000KgDM/ha, then hard graze or mow tight and remove following the harvest interval
- Tine harrowing opens the base and stimulates soil biology
- Seeds are drilled shallow (5 to 10mm) and cross-drilling often results in a better take. Rolling to close slots is worthwhile even when the drill has a roller. This aids seed-soil contact and reduces the risk of "slug highways"



Destroyed sward direct drilled, 1 June 2022



Established sward, 18 August 2022



Disc based direct drill with Guttler roller to rear

Direct drilling - getting it wrong

- Herbal leys need fertile soils, with legumes in particular benefitting from adequate supply of Phosphorus and Potassium. Test soils well in advance and target sites with RB209 grassland target indices of 2 and 2- respectively. Target pH between 6 and 7.
- Good soil structure and absence of compaction is crucial if direct drilling.
- Thatch in the base of the previous grass sward can be a problem. This may be due to; lack of physical seed-soil contact (hair pinning), release of organic acids from decaying material, insufficient oxygen and mineralised nitrogen for emerging seedlings.
- Grassland pests (e.g leatherjackets, wireworm, slugs) can also harm the new ley if not dealt with and are more likely to be a problem following older leys – may benefit from a short-term brassica break crop
- In some cases, the primary cause of failure is not readily apparent



Sward cover 9 November 2023 (drilled 31 August)



Localised establishment, 26 March 2024



Tight soil structure with surface thatch and couch grass rhizomes, 9 November 2023

Min till after sward destruction

- Where a risk of poor establishment from decaying surface matt or layer of surface compaction, min till has proven successful. This creates a seedbed for optimal seed-soil contact without ploughing and the loss of good soil structure at depth.
- Due to soil exposure, there is an increased risk of weed germination. It is therefore best on clean (e.g. former arable) land or in combination with a stale seedbed or break crop to reduce weed populations in advance of sowing
- As for direct drilling, glyphosate removes re-growth and competition from the existing grass sward
- Some farmers lime before sowing to reducing surface acidity as the previous sward decays
- Important to remove trash; some treat the standing crop at around 3000KgDM/ha, then hard graze or mow / remove as silage following the harvest interval
- Cultivating to less than 10 centimetres with a power harrow, discs or similar allows for a fine seedbed, whilst pre-rolling can be worthwhile to create firm conditions for sowing
- broadcasting seed or using a tine harrow with air-seeder keeps it shallow (5-10mm), a further roll providing good seed-soil contact



Surface power harrowing following glyphosate treatment and removal of second cut silage, August 2021



Emerging sward, September 2021



Established sward, 28 July 2022

Stale seedbeds

- The creation of a seedbed which is then left unsown, is a useful way of germinating problem weed species so that they may then be controlled by herbicide or cultivation – though note the latter can in some cases make a problem worse.
- Important to allow sufficient time for the target species to germinate and reach the minimum stage of growth for effective control
- Species which germinate at other times or throughout the year will not be fully controlled – some follow up spot treatment is still to be expected. Use of a break crop can provide further opportunities after the break (or within the crop for broad leaved weed control within a cereal or short-term grass ley)
- If treatment is left too late, there is a risk of a large amount of decaying surface trash which can impair establishment of the following ley



Emerging herbal ley with Dock pre-treated with non-selective herbicide, 21 June 2025



Contrast between untreated and treated seedbed, 21 June 2025



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Break crops; Brassicas

- Short-term break crops between existing grass and a new herbal ley are a useful step to reduce weed pressure, break pest cycles, deal with surface thatch and improve conditions for sowing. They can also help maintain forage supply during the re-seeding process.
- Brassicas help reduce risk of grassland pest damage and allow 2 opportunities for broad-leaved weed control (before and after)
- Can be useful for mid-summer forage when re-seeding grazing land e.g. dairy platform
- Options include stubble turnips, hybrid brassicas, forage rape
- Avoid heavy land, slopes, land near watercourses or soils liable to erosion – spring / summer presents less of a risk
- Min till helps remove thatch but may result in more weeds which need to be controlled prior to the herbal ley – this can be a strategy to deplete the seed bank
- Direct drill the following herbal ley to avoid germinating further weed seeds
- Direct drilling of both the brassica and herbal ley is possible, reducing weed germination and improving stock carrying capacity (turf / roots intact), though the brassica can be harder to establish



Diverse brassica mix, 18 July 2023. Direct drilled 19 May



Emerging herbal ley after winter grazed forage rape, 16 May 2023. Direct drilled 1 May



Fully established herbal ley after forage rape, 11 August 2023. Direct drilled 1 May

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Break crops; cereals

- Cereals offer multiple opportunities for broad-leaved weed control (before, within and after the cereal crop)
- They are versatile and can be harvested as arable silage, wholecrop or for grain and straw
- Can be established by min till or direct drilling – though min till more reliable following grass
- Direct drilling herbal ley into a clean cereal stubble avoids germinating more weed seeds
- A second (spring) cereal can be undersown with herbal leys, maintaining farm productivity through establishment, though this does reduce opportunities for weed control using broad-leaved herbicides



Wholecrop spring barley, established by discing, rolling and direct drilling, photo 19 July 2023



Herbal ley being direct drilled 15 August 2022



Young herbal ley, 1 January 2022. Direct drilled into cereal stubble August 2021

Establishment; soil temperature

- Herbal leys, legumes in particular, need consistently warm (at least 8 to 10°C) and moist soils to germinate and establish.
- This generally means from late April to the end of August, depending on location within the country, altitude and local climate.
- Where moisture allows, May to July allows for a longer period of favourable temperature before the autumn. This allows for rapid establishment to outcompete weeds, plus grazing to thicken the sward and prevent incursion of chickweed during wet, cool weather. A well-established sward is also more likely to tolerate grazing with sheep to control chickweed, should this be a problem
- Earlier sowing must be balanced against impacts on forage supply, and it is worth considering strategies to maintain stocks such as the undersowing of cereals or use of short-term grass leys prior to the herbal ley.



Sown 20 June 2024 (photo 10 September)



Sown 14 August 2024 (photo 10 September)



Sown 20 June 2024 (photo 29 November)
well established



Sown 14 August 2024 (photo 29 November)
poorly established with chickweed

Establishment; deep roots

- It is always sensible to avoid sowing just before a prolonged dry spell, aiming instead for a reliable period of rain to ensure seeds germinate and grow well.
- That said, herbal leys appear to demonstrate greater ability to establish in dry conditions than grass alone. Deep rooting species including red clover, chicory, plantain, lucerne and sainfoin form the bulk of the early cover, acting as a nurse crop for the ryegrass sheltering beneath



Direct drilled 1 June 2022, prior to dry summer



18 August, with no rain – hottest day ever recorded locally in July



Chicory, plantain and red clover dominant



Grasses beneath herb / legume canopy

Maintaining forage supply; undersowing

- Re-seeding in the spring or early summer coincides with peak grass growth and can lead to shortfalls in forage
- Undersowing a spring cereal is one way to mitigate this, allowing for a rapidly established and productive crop of arable silage or wholecrop. A fully established herbal ley is then present upon harvest of the cereal which can re-grow for a second cut or graze
- The end-to-end process can be achieved through direct drilling of the cereal with the herbal ley then drizzled over the top in a second pass. Alternatively, the herbal ley mix can be broadcast as a separate operation.



Spring barley, oats and peas direct drilled 30 April 2024. Herbal ley drizzled on the surface and rolled.



Emerging wholecrop, 31 May 2024



Wholecrop with herbal ley beneath, 16 July 2024



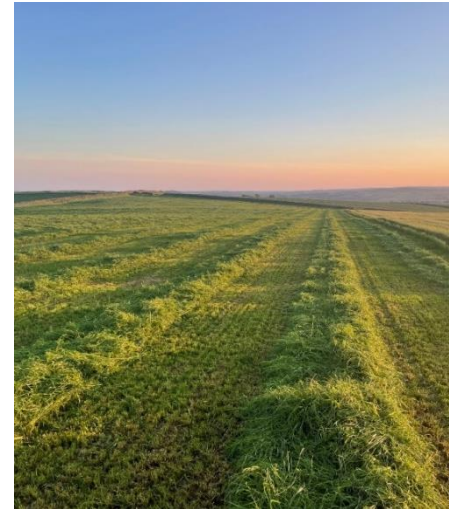
Fully established herbal ley following harvest of wholecrop, 9 September 2024

Maintaining forage supply; short term leys

- An alternative to wholecrop cereals where not practical e.g. baled silage system
- Can be sown late season following destruction of previous ley – either by min till or direct drilling
- Weed control opportunities upon destruction of previous grass, within short term ley and upon termination
- Do not keep for too long due to ingress of annual meadow grass; treat standing crop with non-selective herbicide at 2nd or 3rd cut and remove following harvest interval
- Direct drill the following herbal ley to avoid exposing new weed seeds
- Builds a forage “buffer” in advance of the herbal ley



Original ley with cover of broad-leaved dock, September 2022



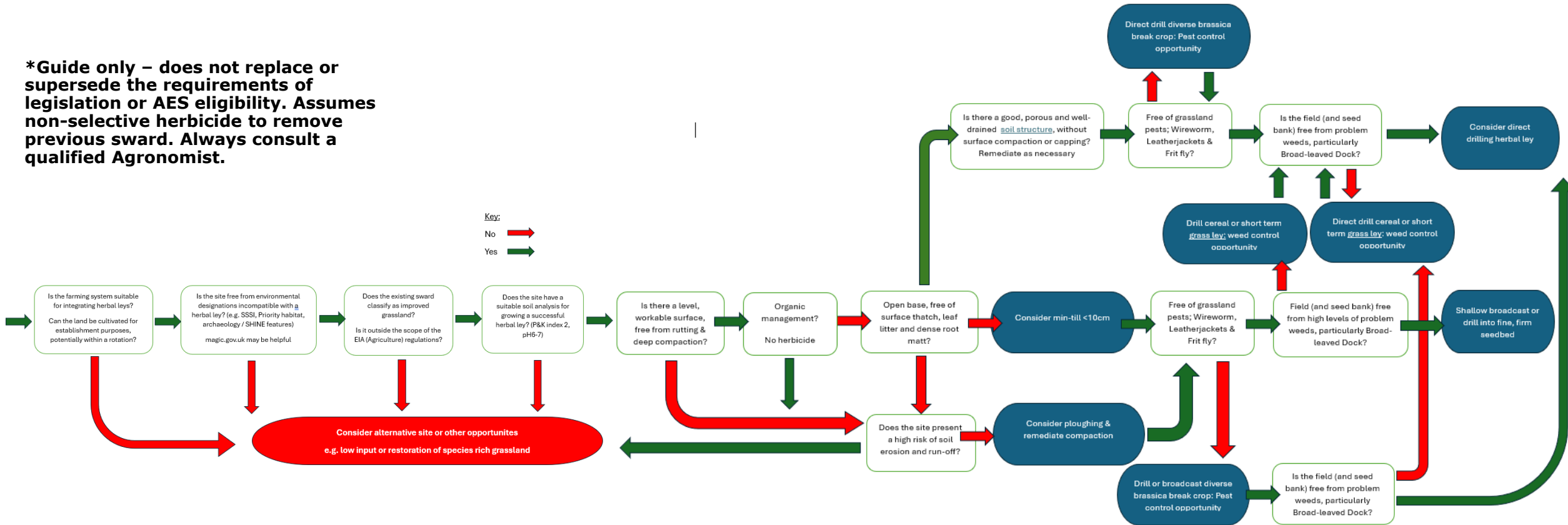
Second cut westerwold silage, June 2023



Weed and thatch free base, ready for sward termination and direct drilling herbal ley

Decision aid for establishing herbal leys within improved grassland systems

***Guide only – does not replace or supersede the requirements of legislation or AES eligibility. Assumes non-selective herbicide to remove previous sward. Always consult a qualified Agronomist.**



Catchment Sensitive Farming (CSF) is led by Natural England, in partnership with Defra, the Environment Agency and the Forestry Commission.

A whole-farm system for the White Peak?

- Barkerfields Farm; dairy to beef 12 years ago
- 150 acres herbal leys, 70 acres cereals in rotation
- Herbal leys in approx. 4 years
- Up to 4 cuts of silage / year (13-14 tons DM / ha)
- Cereal break – opportunity for weed control
- Whole-crop / crimped grain – resilient
- Min till / direct drill / undersow where possible
- High diversity, mixed rotational farming system



A planned approach to system change

(Slide to illustrate phased approach utilising SFI actions in support)

Blocks E & F: Cleanest land, good pH, P&K index 2. Preferably ex arable. If suitable direct drill or min-till Herbal ley - excessive cultivation leads to more dock seed germination, loss of soil structure and carbon.

Blocks A & B: Fields with some docks or soil compaction requiring control over the next two years – more extensive strategic cultivation may be required.

Blocks C & D: Swards with good levels of clover – useful flexibility for grazing and can come into rotation later.

	Agreement 1			Agreement 2			Agreement 3			Agreement 4		
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Block A 17%	AHW8	AHW8	CNUM2*	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3	CSAM3	CSAM3	CSAM3
Block B 17%	CIGL2	CIGL2	AHW8	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3	CSAM3	CSAM3
Block C 17%	CNUM2	CNUM2	CIGL2	AHW8	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3	CSAM3
Block D 17%	CNUM2	CNUM2	CNUM2	AHW8	AHW8	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3
Block E 17%	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8
Block F 17%	CSAM3	CSAM3	CSAM3	CSAM3	CSAM3	AHW8	AHW8	CSAM3	CSAM3	CSAM3	CSAM3	AHW8
Average combined payments £/ha	294	294	294	348	348	348	348	348	348	348	348	348
AHW8 = Whole crop spring cereal & overwinter stubble			CNUM2 = Legumes on improved grassland				*Herbal ley mix claimed as CNUM2					
CSAM3 = Herbal ley			CIGL2 = Winter bird food on improved grassland									

Key learning points from the white peak trials

- Do your homework – talk to others who grow herbal leys successfully
- Start small - do a trial
- Pick a clean, productive field
- Avoid sensitive areas – they may be protected and will offer other opportunities
- Establish well – don't cut corners
- Try a good mix - see which species thrive
- Plan ahead to scale up – address soil issues, weeds, forage, rotation

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