



agrovista
seeds



Cover crops

2023

Environmental
stewardship
mixtures

growing through innovation

Welcome

to our 2023 cover crop and environmental stewardship brochure

Agrovista's involvement in cover crop research started in earnest 11 years ago back in 2012 at our flagship soil health site in Lamport, Northamptonshire.

Originally we looked at the use of cover crops to help reduce severe blackgrass populations by non chemical means. The use of cover crops enabled spring drilling of wheat and barley in soil types that were previously considered too challenging for any type of spring crop establishment. The resulting reduction in blackgrass populations far exceeded our most optimistic expectations and our journey into understanding how cover crops can benefit modern day farming systems had well and truly begun.

Since 2012 our cover crop range has continuously evolved with species selection determined by plant types that maximise both root and shoot biomass, whilst not creating potential problems further down the line with excessive or difficult to control volunteers in subsequent cropping. The benefits we have seen to soil structure and biology over the past 10 year period has given us great hope for the future of our soils. Additional benefits include nutrient retention, carbon capture, an increase in insect diversity, reduction in soil erosion and the potential for grass weed reduction with well planned and executed rotations utilising cover crops. It is never too late to embark upon the cover crop journey and we are here to help if required.

Agrovista produce a range of mixtures which are detailed in our latest cover crops brochure. In addition to our standard range we have a bespoke cover crop service to accommodate growers specific requirements for cover crop mixtures. This is a rapidly expanding part of our business and demonstrates a great interest and understanding of cover cropping by farmers and growers and we are always on hand to help create mixtures that fit your exact cropping and rotational requirements. This bespoke service comes at no additional cost and once a mixture is agreed upon we can usually mix and despatch within a 48 hour timeframe.

The boundaries between the shorter term cover crop mixtures and longer term environmental stewardship mixtures are increasingly blurred but both play an important part in future farm profitability. The Agrovista range of stewardship mixtures is also detailed within this brochure and I hope that you find the publication a useful and informative read.



NIGEL WALLEY
National Seed Manager

Potential benefits of cover crops



Soil structure improvements

A huge benefit of cover crops is the ability of species with vigorous and active root systems to open soils with their roots and hence improve soil structure. There is much debate about the “roots not iron” philosophy of no-till conservation agriculture, but comprehensive Agrovista soil health work has shown huge benefits from a combination of roots and reduced reliance on iron.

In some cases iron may not be needed at all. Where it is required, the work has clearly shown the target should be to use only just enough iron to stretch soils sufficiently to provide a conduit for the roots from cover crops to penetrate through any compacted layers.

By using cover crops with complementary but differing rooting morphology and depth potential, they can open the soil throughout the whole profile allowing free movement of air and water. Through improving soil structure, cover crops can provide savings in cultivation costs.

Nutrient capturing, fixing and recycling

Cover crops can undoubtedly help to mop up residual nutrients in the soil, and then hold them in stable forms before releasing them ready for the following commercial crop. This can significantly cut the risk of nutrients such as nitrates leaching into water and reduce inorganic fertiliser requirements.

The time of destruction and the carbon:nitrogen (C:N) ratio of the cover crop will determine how quickly trapped nitrogen will be available to the following crop. Species with lower C:N ratios e.g. vetches release nitrogen in an available form more quickly.

Legumes can also fix nitrogen from the atmosphere. They may not be in the ground long enough to fix huge amounts, but the effect can still be significant.

Complementary rooting structures from different cover crops can also access areas in the soil, in micropores for example, which roots from most arable crops would not be able to access, hence they can increase availability of ‘free’ nutrients in the soil. This can be improved further by selecting species with good mycorrhizal relationships. Cover crops are very efficient at helping recycle nutrients into crop-available forms.



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Reducing soil erosion

During high-risk periods for soil erosion from wind and/or water, actively growing plants play a vital role in holding soils together, reducing velocity of both rain and wind on the soil and thus preventing losses of soil, sediment, nutrients and pesticides to the natural environment. The comprehensive root systems from cover crops also hold the soil particles together, reducing risk of soil movement and potential runoff.



Managing pests

Cover crops can be used for the control of certain soil-borne pests such as nematodes through either trap cropping or soil biofumigation. The main species available are typically brassicas with high isothiocyanate levels and this has led to the creation of cover crop mixes containing specific mustards and radishes such as the Hardy mix.

Managing weeds

Cover crops can offer short-term suppression of weeds to give a clean seed-bed ahead of a crop, for example where chemical weed control options might be limited. More importantly they can be used as a long-term strategic tool to reduce the overall burden of problem weeds like blackgrass, as developed by Agrovista at Project Lamport.

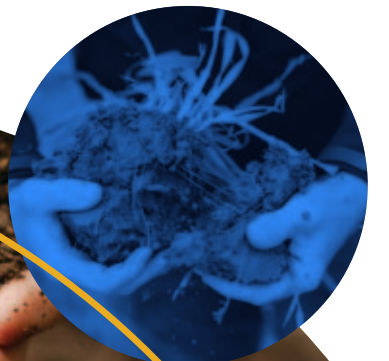
Specific cover crops usually based around black oats are sown in the autumn, acting as a trap crop. Black oats have an initial open growth habit, allowing problem grass-weeds to germinate amongst them.

The cover crop and weeds are then destroyed together before any seed is set. The extensive rooting system provided by the black oats not only helps to condition the soil and dry the soil over winter, allowing spring cropping to be utilised on even the heaviest of land, but also serves to stabilise the soil. This means when the commercial crop is sown with a direct drill, there is minimal soil disturbance, hence further grass-weed seeds are not encouraged to germinate with the spring crop. This helps to both deplete the weed seedbank and give the following crop a clean start.

Building soil fertility and nutrition

Using cover crops to give soils a nutritional boost is the basis of the term “green manure”. The cover crop also helps stimulate and feed biological activity in the soil and increase worm numbers – a very useful indicator of soil health.

One of the key requirements of ‘Regenerative’ agriculture is to maintain living roots in the soil at all times, highlighting the importance of using cover crops to ensure we harvest sunlight and feed soil biology throughout as much of the year as possible, which is fundamental to long-term functionality of soils. Well-managed cover crops will not only build long-term soil organic matter, but will also help increase the quantity of soil biota, increasing the breakdown speed of organic matter and recycling nutrients into crop-available forms.



Managing cover crops

– the principles

Good management is the key to a successful cover crop, particularly on heavy land where the two biggest challenges are optimum establishment and effective destruction.

More than any other factor, the way these operations are managed has had the most significant impact on yield in following crops at Project Lamport,

our flagship Regenerative Agriculture research site in Northamptonshire.

In the main, it is poor decision-making that leads to failure and gives cover cropping a bad name. The following guidelines will greatly increase the chances of growing an effective stand, regardless of soil type, weather, or cover crop species.

Timely establishment

Regardless of a cover crop's purpose or the species selected, sowing seeds into an appropriate seedbed will help ensure quick establishment and strong growth.

Good timing is critical. A few days' delay in sowing can adversely affect a cover crop's performance, as plants need to harvest as much sunlight as possible, as quickly as possible, to maximise root and top growth. A short-term cover crop planted ahead of an autumn-sown cereal may only be in the ground for two months, and time is also of the essence for an over-wintered cover as growth slows during the late autumn and winter.

While timely drilling is key, ideally soon after the combine has left the field, this should not be at the expense of seedbed quality.

Straw management

The first step to good establishment should be taken before the preceding crop is harvested. The combine's straw chopper should be set to produce a fine chop that spreads across the full width of the cut, as there will be little time for crop residue to break down before the cover crop is drilled and no stale seedbed cultivations to aid the process.

Cultivation strategy

The next step is to assess soil structure and the need for remedial cultivations. If yields in the preceding cash crop were good and pretty even across the field, and steps were taken to minimise soil damage during harvesting, there is unlikely to be a problem.

Suspect areas warrant closer inspection with a spade. Work at Project Lamport has shown that 'cracking' the soil using a low-disturbance subsoiler at 100-125mm is generally sufficient. Provided the correct cover crop species have been chosen, the roots will sort out deeper compaction as they grow.

“

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Sowing

As with any crop, covers can be established in several ways, including direct drilling. This has been very successful. With other types of drill, a very shallow cultivation either as a separate operation or during drilling where appropriate should be sufficient to mix in the straw and mineralise some nitrogen to help kick-start crop growth.

Cover crop mixtures often consist of seeds of varying sizes that require differing sowing depths. Modern drills can often deal with this, while older equipment that suits larger seeds will benefit from the addition of a small seeds application kit.

After drilling, the seed-bed can be rolled as necessary – soil moisture conservation is important throughout this process.

In a new area of intensive research to help improve establishment and timeliness, Agrovista is also investigating broadcasting the cover crop seed into the preceding standing crop several weeks before harvest. Early results suggest this is viable with smaller seeds and work is continuing to pinpoint appropriate timings and species.

Effective destruction

Destruction timing is closely linked to several factors, including drill capability, land type, size of covers and, most importantly, the carbon:nitrogen ratio.

Where covers with higher C:N ratio such as cereals and brassicas are grown, especially on heavy land, it is vital to apply glyphosate early (December or January if possible) so plant material has time to break down. This enables mineralisation of nutrients and increases the

diversity of soil biology. If destruction is too late, nutrients will be immobilised in an excess of cover crop residue, so the following crop will not benefit when it needs them most.

Early destruction also allows the soil surface to dry, improving drill performance and reducing slotting, whilst minimising the green bridge risk.

Work at Project Lamport using a black-oat based cover crop has shown a distinct yield advantage in spring wheat that followed destruction in late December/early January compared with two weeks pre-drilling (see table).

In practice, a second application may be needed in bulky cover crops to ensure a complete kill before drilling.

Most drills, with some adjustment, will comb through reasonable amounts of cover crop residue provided it remains anchored to the roots. It is best to avoid surface cultivations before drilling.

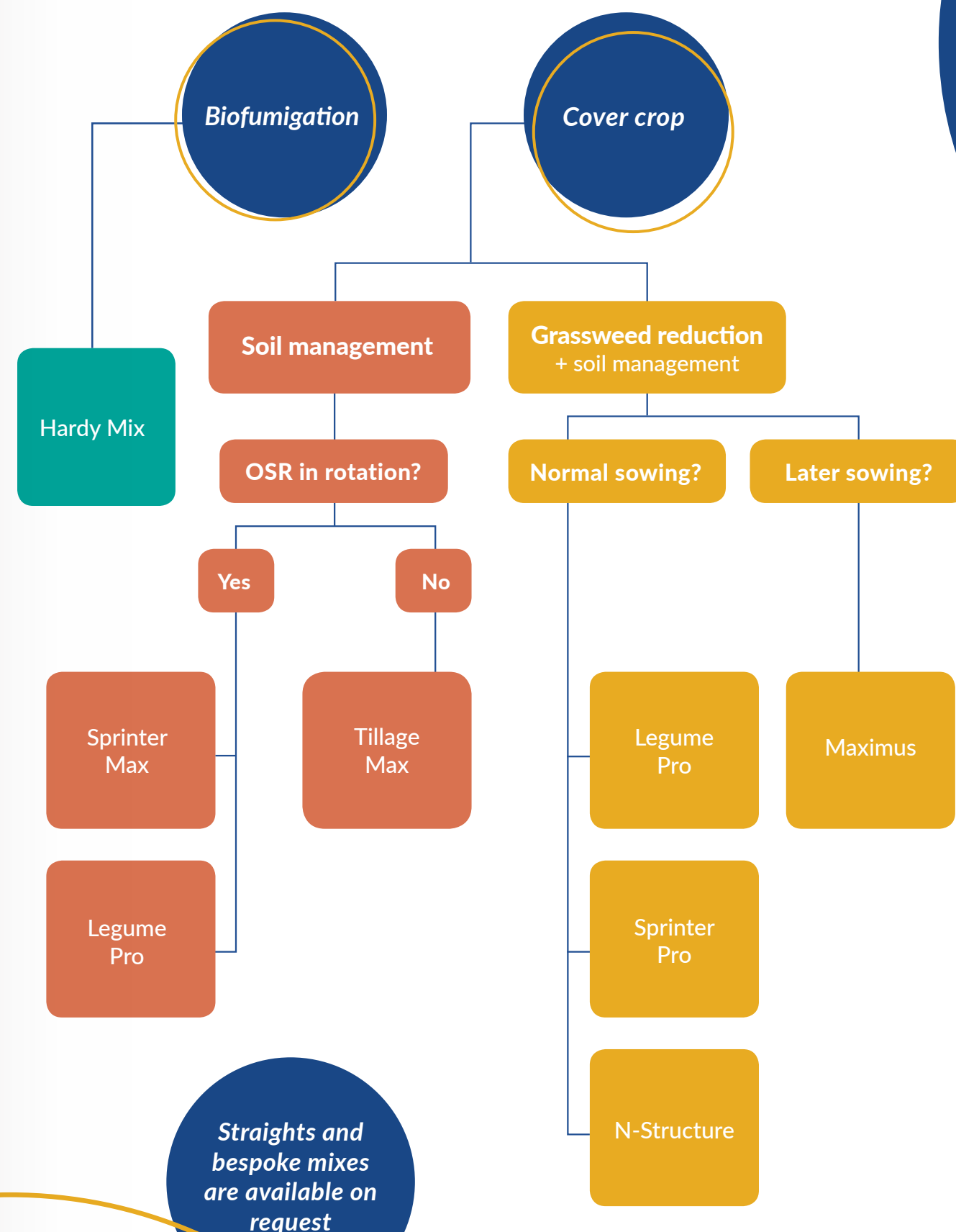
Where covers consist of lower C:N ratios, such as vetch, early destruction is less important, especially on lighter land. Growers who own specialist drills that work in a standing cover crop can spray just before or just after sowing the following crop.

Impact of cover crop destruction timing on spring wheat yield (t/ha)

	Early destruction	Later destruction	No cover crop
Year 1	10.30	9.12	9.59
Year 2	8.65	7.75	6.01
Year 3	8.60	7.31	7.35

Early destruction has always out-performed no cover crop.

What function do you want the cover crop to perform?



Mixtures

Key to icons

The icons that the appear alongside all mixture description indicate the benefits



Soil structure



Nutrient capture



Grass weed control



Nematode reduction

Sprinter-Pro

Black oats + Phacelia



The Altesse black oat has a low C:N ratio to allow quick plant breakdown and release of nutrients. The addition of phacelia creates a beneficial root profile which has excellent soil conditioning properties while the Altesse black oat aids soil drying at depth.

Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	15 kg/ha		Sowing depth	10-15 mm								
Scottish EFA green cover compliant 2023	✓		Pack size	15 kg								
Product information	Sprinter-Pro has been specifically designed to help with problem grass weed situations. Adherence to the principles of the “Lamport System” is crucial to obtain best results. A reduced level of phacelia in this mix ensures grass weeds can still germinate and are able to be destroyed before the following crop is drilled. Care must be taken not to allow the phacelia to set seed.											
Cover crop destruction guidelines	Glyphosate should be applied 6-8 weeks before drilling the following crop if possible. Second glyphosate application should be applied pre drilling of the following crop to remove small grass weeds.											

Maximus cover crop

Black oats + Common vetch



The original cover crop solution for grass weed control. Correct use allows germination of autumn weeds and improved soil structure via different rooting profiles. Ideal soil preparation to allow for direct drilling of spring crops.

Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	20-25 kg/ha		Sowing depth	15-25 mm								
Scottish EFA green cover compliant 2023	✓		Pack size	20 kg								
Product information	Maximus cover crop is the original cover crop solution for problem grass weeds designed to aid spring drilling using the “Lamport System”. In a grass weed situation following OSR or early sowing reduce seed rate to 20kg/ha. Check previous herbicide use to ensure no residual damage occurs to the cover crop.											
Cover crop destruction guidelines	Glyphosate should be applied 6-8 weeks before drilling the following crop if possible. Second glyphosate application should be applied pre drilling of the following crop to remove small grass weeds.											

N-Structure

Black oats + Berseem clover



Addition of berseem clover provides a deeper rooting structure with minimal soil disturbance. Rapid breakdown of plant biomass aids rapid release of nutrients.

Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	15-20 kg/ha		Sowing depth	10-15 mm								
Scottish EFA green cover compliant 2023	✓		Pack size	20 kg								
Product information	For those preferring to use berseem clover as opposed to vetches or phacelia, N-Structure provides the ideal solution. When used in a grass weed situation following OSR or early sowing reduce seed rate to 15kg/ha. Check previous herbicide use to ensure no residual damage occurs to the cover crop.											
Cover crop destruction guidelines	Glyphosate should be applied 6-8 weeks before drilling the following crop if possible. Second glyphosate application should be applied pre drilling of the following crop to remove small grass weeds.											

Legume Pro

Berseem clover + Phacelia + Common vetch



Non-cereal catch crop utilising powerful deep rooting of berseem clover, shallower structuring from vetches and soil conditioning from phacelia.

Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	10 kg/ha		Sowing depth	10-15 mm								
Scottish EFA green cover compliant 2023	✓		Pack size	20 kg								
Product information	Legume Pro is the ultimate catch crop to structure and condition the soil before planting late-sown cereals. Beware if previous spring crop treated with clopyralid. Check previous herbicide use.											
Cover crop destruction guidelines	Glyphosate should be applied 1-2 weeks pre winter wheat crop drilling.											

Sprinter-Max

Black oats + Phacelia



Sprinter-Max benefits from a far higher inclusion of phacelia than Sprinter-Pro giving much better ground cover potential and greater root biomass in first 12 inches of soil profile. The combination of phacelia with Altesse black oats allows excellent soil conditioning while still helping to dry soils at depth.


Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	10 kg/ha	Sowing depth	10-15 mm									
Scottish EFA green cover compliant 2023	✓	Pack size	20 kg									
Product information	Sprinter-Max is ideal as both a catch or cover crop. Higher inclusion rates of phacelia ensure excellent ground cover and weed suppression. Phacelia has a complementary root structure to black oats making Sprinter-Max perfect for improving soil structure. Ideal where concerns over pests such as slugs and pea and bean weevil rule out species such as common vetch.											
Cover crop destruction guidelines	Phacelia should be destroyed before seed set and 6-8 weeks before following crop is drilled.											

Tillage Max

Black oats + Oilseed radish



Asian radish works in combination with black oats to provide deep soil penetration and improved drainage. Not suitable in areas where problem blackgrass or ryegrass are an issue.

Sowing date	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC											
Sowing rate	15-25 kg/ha	Sowing depth	15-25 mm									
Scottish EFA green cover compliant 2023	✓	Pack size	20 kg									
Product information	Tillage Max is suitable in rotations where peas and beans have replaced OSR. Avoid where OSR or brassica crops are in rotation. For early sowing reduce seed rate to 20 kg/ha. Check previous herbicide use to ensure no residual damage occurs to the cover crop											
Cover crop destruction guidelines	Glyphosate should be applied 6-8 weeks before drilling the following crop if possible. Second glyphosate application should be applied pre drilling of the following crop to remove small grass weeds.											

Hardy Mix-PCN Reduction

Oilseed radish + Rocket




Proven reduction of PCN with good levels of soil structure improvement and nutrient trapping capability.

Sowing date	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>JANFEBMARAPRMAYJUNJULYAUGSEPOCTNOVDEC</div>											
Sowing rate	15 kg/ha	Sowing depth	15-25 mm									
Scottish EFA green cover compliant 2023	X	Pack size	15 kg									
Product information	Hardy Mix is designed to reduce PCN levels whilst having a beneficial affect on soil structure. For autumn incorporation sow from the end of July to mid August. For spring incorporation sow from September onwards. Treat as a commercial crop drilling into a clean seedbed and adding N:P:K as required. Up to 90% of any applied nutrients will be available to the following crop.											
Cover crop destruction guidelines	Macerate crop ten days after flowering and immediately incorporate into the soil.											

Straights


Altesse black oats and Spirale black oats

Altesse is the black oat variety most suitable for drilling in the main establishment window. Spirale is better suited to early season catch cropping or later drilling situations. The low C:N ratio of these black oat varieties are better suited to ensure rapid breakdown and release of nutrients. Beneficial root profile helps to dry soils at depth.

Sowing date	
Sowing rate	15-25 kg/ha
Sowing depth	15-25 mm


Phacelia

Phacelia produces a very dense root system and is ideal as a catch or cover crop. Very effective at suppressing weeds and a good potash scavenger. Ideal partner for black oats.

Sowing date	
Sowing rate	2-5 kg/ha
Sowing depth	10-15 mm


Common vetch

Nitrogen fixing and deep rooting helping to improve soil structure and nutrient status. Excellent weed suppressant. Mix with black oats for EFA compliancy.

Sowing date	
Sowing rate	5-40 kg/ha
Sowing depth	15-25 mm


Fodder Radish (*inc Tillage radish*)

Excellent at trapping and retaining residual nitrogen which is then slowly released back into the soil. Produces large amounts of biomass and the large tap root helps to break up compacted soils. Type one and two varieties are able to suppress nematodes.

Sowing date	
Sowing rate	5-10 kg/ha
Sowing depth	10-20 mm


White mustard

Mustard can help to improve soil structure but has a high C:N ratio and so takes a long time to break down and release nutrients back into the soil. Type one and two varieties are able to suppress nematodes.

Sowing date	
Sowing rate	6 -12 kg/ha
Sowing depth	10-20 mm


Tabor berseem clover

Powerful tap root makes berseem clover ideal for improving soil structure. Good partner for black oats in a catch or cover crop mixture. The variety Tabor is best for companion planting with oilseed rape.

Sowing date	
Sowing rate	2-5 kg/ha
Sowing depth	5-10 mm


Niger

Close relation to sunflowers hence very frost sensitive. Produces large amounts of biomass especially in mixtures with phacelia and mustard. When sown with phacelia it is very attractive to bees. Niger is also fairly drought tolerant.

Sowing date	
Sowing rate	5-10 kg/ha
Sowing depth	10-20 mm


Crimson clover

Fast establishment and excellent weed suppression. Good source of forage for livestock. Overwinters well with rapid spring growth. Able to tolerate poorer quality soils.

Sowing date	
Sowing rate	5-10 kg/ha
Sowing depth	5-10 mm


Cress

Very quick to establish and used extensively in Europe as a catch crop. Use as a partner to black oats, clovers or phacelia.

Sowing date	
Sowing rate	10-20kg/ha
Sowing depth	5-10 mm

Buckwheat

Excellent at trapping excess nitrogen. Creates good ground cover and performs well on poorer soil types. Excellent weed suppressant, improves soil structure and is a good phosphorous scavenger. Seed carry over can be a problem before maize or beet the following spring.

Sowing date	
Sowing rate	25-50 kg/ha
Sowing depth	15-25 mm



**Environmental
stewardship
mixtures**

AB1



Pack size
15kg
Sow at
20kg/ha

Provides areas of flowering plants to boost essential food sources for beneficial pollinators such as bumble bees, solitary bees, butterflies and hoverflies.

Establish in blocks or strips between 1 March and 15 September at a sowing rate of 15-20kg/ha.

Medium to Heavy Land

Vetch – winter	<i>Vicia sativa</i>	55%
Red clover	<i>Trifolium pratense</i>	9.5%
Altaswede	<i>Trifolium pratense</i>	10%
Alsike clover	<i>Trifolium hybridum</i>	10%
Birdsfoot trefoil	<i>Lotus corniculatus</i>	3.5%
Wild carrot non-native		1.5%
Yarrow agricultural	<i>Achillea millefolium</i>	0.5%
Yellow blossom clover	<i>Melilotus officinalis</i>	5%
Crimson clover		3.5%
Oxeye daisy non-native		1%
Black medick	<i>Medicago lupulina</i>	0.5%

Light land

Sainfoin	<i>Onobrychis viciifolia</i>	42%
Vetch – winter	<i>Vicia sativa</i>	28%
Red clover	<i>Trifolium pratense</i>	12%
Birdsfoot trefoil	<i>Lotus corniculatus</i>	4%
Lucerne (inoculated)	<i>Medicago sativa sativa</i>	8%
Wild carrot non-native		0.25%
Yarrow	<i>Achillea millefolium</i>	0.25%
Yellow blossom clover	<i>Melilotus officinalis</i>	5%
Yellow trefoil / black medick	<i>Medicago lupulina</i>	0.5%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£614/ha	1 March - 15 September	<ul style="list-style-type: none"> Arable Temporary grass Bush orchards Whole or part parcel	Yes Closed between 15 March and 31 August	Six flowering species two must be from list: <ul style="list-style-type: none"> Common knapweed Musk mallow Oxeye daisy Wild carrot Yarrow

AB3



Pack size
20kg
Sow at
30kg/ha

AB3: Beetle banks

(AB3, SW1, SW2, SW3, SW4, SW7, SW8, WT1, WT2)

Throughout the year there will be a raised bank, measuring between 3m to 5m wide and at least 0.4m high, with a dense grass cover. This will be established during the first year and maintained for the duration of the agreement.

- leave gaps no more than 25m wide at each end of the ridge to allow access for machinery
- establish or maintain a tussocky grass mixture in year one of the agreement
- cut the established mixture to control woody growth and suckering species - cut after 1 August to protect nesting invertebrates

Grass margin with cocksfoot

Strong creeping red fescue	30%
Smooth stalked meadow grass	25%
Cocksfoot	20%
Tall fescue	15%
Timothy	10%

Grass margin (no cocksfoot)

Strong creeping red fescue	30%
Smooth stalked meadow grass	25%
Tall fescue	22%
Timothy	15%
Slender creeping red fescue	8%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£667/ha	Any time	<ul style="list-style-type: none"> Arable Temporary grass Whole or part parcel	Cut several times in year one to aid establishment. Thereafter only cut after 1 August to protect nesting birds and invertebrates	Sow a mixture of fine-leaved grasses such as red fescue together with some tussock-forming varieties like tall fescue, timothy, and cocksfoot.

AB8



Pack size
10kg
Sow at
20kg/ha

Flower-rich grass margins or plots provide important habitat and foraging sites for invertebrates, including wild pollinators such as bumblebees, solitary bees, butterflies and hoverflies, and farmland birds like the yellowhammer.

Sow between April/May and early September (mid to late summer is usually the best time to sow wildflowers) at a rate of 16-20kg/ha

Once established, the margin/plot will flower throughout the summer to provide an abundant supply of pollen and nectar.

Up to 90% of the margin or plot should be cut or grazed between 15 August and 31 October to allow for new growth in the spring whilst the remainder will provide a winter refuge for wildlife. Dense cuttings should be removed.

Grasses with wild flowers

Sheeps fescue	25%	Oxeye daisy non-native	0.5%
Smooth stalked meadow grass	30%	Sainfoin (agricultural) <i>Onobrychis vicifolia</i>	1.5%
Hard fescue	10%	Sheeps Burnet (Ag)	1.25%
Cocksfoot	10%	Ranger plantain	2%
Slender creeping red fescue	15%	Vetch – hairy <i>Vicia villosa</i>	0.5%
Birdsfoot trefoil <i>Lotus corniculatus</i>	1.5%	Wild carrot non-native	0.3%
Clover Alsike <i>Trifolium hybridum</i>	0.75%	Yarrow agricultural <i>Achillea millefolium</i>	0.25%
Clover red1 <i>Trifolium pratense</i>	1%	Black medick <i>Medicago lupulina</i>	0.45%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£673/ha	April-mid Sept	<ul style="list-style-type: none"> Arable Temporary grass Bush orchards 	Yes Cut or graze up to 90% of the area between 15 August and 31 October	Four grasses (up to 90%) Ten flowering (25% Max/species)

AB9



Pack size
20kg
Sow at
40kg/ha

AB9 mixtures provide important food resources (small seeds) for farmland birds, especially in autumn and winter, whilst the flowering plants within the mixture will benefit insects including bumblebees, solitary bees, butterflies and hoverflies.

Sowing should take place between 15 February and 15 June in blocks or strips of at least 6m wide and between 0.4ha and a maximum of 5ha per plot.

One-year mixtures should be re-established annually and two-year mixes every other year, to maintain seed production. Plots should be left in place until at least 15 February.

1-year mixture

Spring triticale	35%
Spring barley	10%
Spring wheat	45%
Quinoa	4%
Gold of pleasure	2.5%
Dwarf sunflower	3.5%

2-year mixture

Spring triticale	25%
Spring barley	25%
Spring wheat	35%
Kale	5%
Dwarf sorghum	5%
Quinoa	3.5%
Japanese reed millet	1.5%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£732/ha	15 February – 15 June	<ul style="list-style-type: none"> Arable Temporary grass Bush orchards Whole parcel, part parcel or rotational	No	Six seed bearing species from the following groups: Cereals (up to three) Brassicas Other No group to exceed 90%

AB15



Pack size
20kg
Sow at
15-20kg/ha

Legume fallow mixtures provide food for farmland wildlife, such as pollen and nectar for pollinators including bumblebees, solitary bees, butterflies and hoverflies.

The resulting populations of invertebrates provide chick food for farmland birds around the sown area between April and July.

These mixtures can also be a useful part of a rotation aimed at reducing blackgrass populations.

Legume fallow mixture
with grass

Strong creeping red fescue	15%
Smooth stalked meadow grass	5%
Winter vetch	45%
Alsike clover	10%
Lucerne (inoculated)	10%
Red clover blend	12%
Birdsfoot trefoil	2%
Black medick	1%

Legume fallow mixture

Winter vetch	50%
Sainfoin	17%
Alsike clover	10%
Lucerne (inoculated)	10%
Red clover blend	10%
Birdsfoot trefoil	3%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£593/ha	Late summer/ early autumn post-harvest	<ul style="list-style-type: none"> Arable Temporary grass 	No Topping required between 1 March and 15 May in year two to control blackgrass	Six flowering species Grass can be included to smother weeds such as blackgrass

AB16



Pack size
20kg
Sow at
40-50kg/ha

Bumblebird mixtures established on arable and mixed farms provide important food resources for farmland birds, such as tree sparrows and corn buntings, and a range of nectar feeding insects, including butterflies, solitary bees, hoverflies and bumblebees.

Mixtures should be sown at 40-50kg/ha as soon as possible after harvest and before 15 September and re-established in the third year.

Bumblebird mixture

Winter triticale	30%	Alsike clover	4%
Winter wheat	25%	Birdsfoot trefoil	3%
Gold of pleasure	5%	Crimson clover	4%
Fodder radish	6%	Winter vetch	6%
Kale	5%	Phacelia	1%
Winter linseed	10%	Lucerne (inoculated)	1%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£637/ha	As soon as possible post-harvest, and before 15 September. Re-establish in year three.	<ul style="list-style-type: none"> Arable Temporary grass Bush orchards 	No	Six flowering and six seed bearing species to include a maximum of three cereals

GS4

GS4: Legume and herb-rich swards

GS4 legume and herb rich swards provide a vigorous sward with abundant legumes and herbs, suitable for productive cattle and sheep enterprises. This option also provides habitat and food for invertebrates, including crop pollinators, and improves soil structure and water infiltration.

This option prohibits the use of nitrogen fertilisers, which contribute to climate change.

Pack size
20kg
Sow at
15-20kg/ha

Stewardship
Mixture

Festulolium	20%
Tetraploid Intermediate Perennial Ryegrass	25%
Cocksfoot	15%
Smooth stalked Meadow grass	5%
Creeping red fescue	15%
Red clover	7.5%
Sainfoin	4%
Birdsfoot trefoil	2%
Plantain	2.5%
Sheeps burnet	1.5%
Sheeps parsley	0.75%
Yarrow	0.25%

Technisward herbal
light land

Fojtan Perennial plus festulolium	20%
Nolwen (T) L perennial ryegrass	14%
Donata cocksfoot	16%
Winnetou Timothy	7%
Laura Meadow fescue	4%
Red clover blend	10%
Sainfoin	16%
Lucerne	4%
Birdsfoot trefoil	1.5%
Plantain	3.5%
Chicory	1%
Sheeps burnet	1.75%
Sheeps parsley	1%
Yarrow	0.25%

Technisward herbal
med-heavy land

Lofa Hybrid plus festulolium	25%
Nolwen (T) L perennial ryegrass	22%
Winnetou Timothy	10%
Donata Cocksfoot	12%
Laura Meadow fescue	5%
Red clover blend	10%
Alsike clover	4%
Birdsfoot trefoil	3%
Plantain	4%
Sheeps burnet	2.5%
Chicory	1%
Sheeps parsley	1%
Yarrow	0.25%
Black medick	0.25%

At a glance

Payment	When to sow	Where	Grazing/cutting	Species
£382/ha	Any time during the growing season in year one of the agreement	<ul style="list-style-type: none"> Arable Temporary grass Permeant grass that has been cultivated and re-sown in the last five-years 	Yes Must be closed up for a minimum of five weeks between 1 May and 31 July to allow legumes and herbs to flower	Five species of grass (up to 80% of the mixture) four species of legume (not including white clover) and four species of herb or wildflower

SFI
Winter bird
food plots

Pack size
20kg
Sow at
40kg/ha

Winter bird food plots are areas of sown seed-bearing crops that are left unharvested over winter.

They provide a reliable food source for seed-eating farmland birds in winter and shelter for birds, insects and mammals throughout the year.

Invertebrate food (like worms and snails) in spring and summer for birds like thrushes and a place for annual arable wildflowers to grow, flower and set seed.

SFI autumn sown bird food

Winter triticale	25%	Black medic	0.5%
Winter wheat	25%	Red clover	1%
Winter barley	20%	Yellow blossom clover	0.5%
Fodder radish	6%	Winter vetch	4%
Kale	5%	Phacelia	1%
Winter linseed	12%		



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