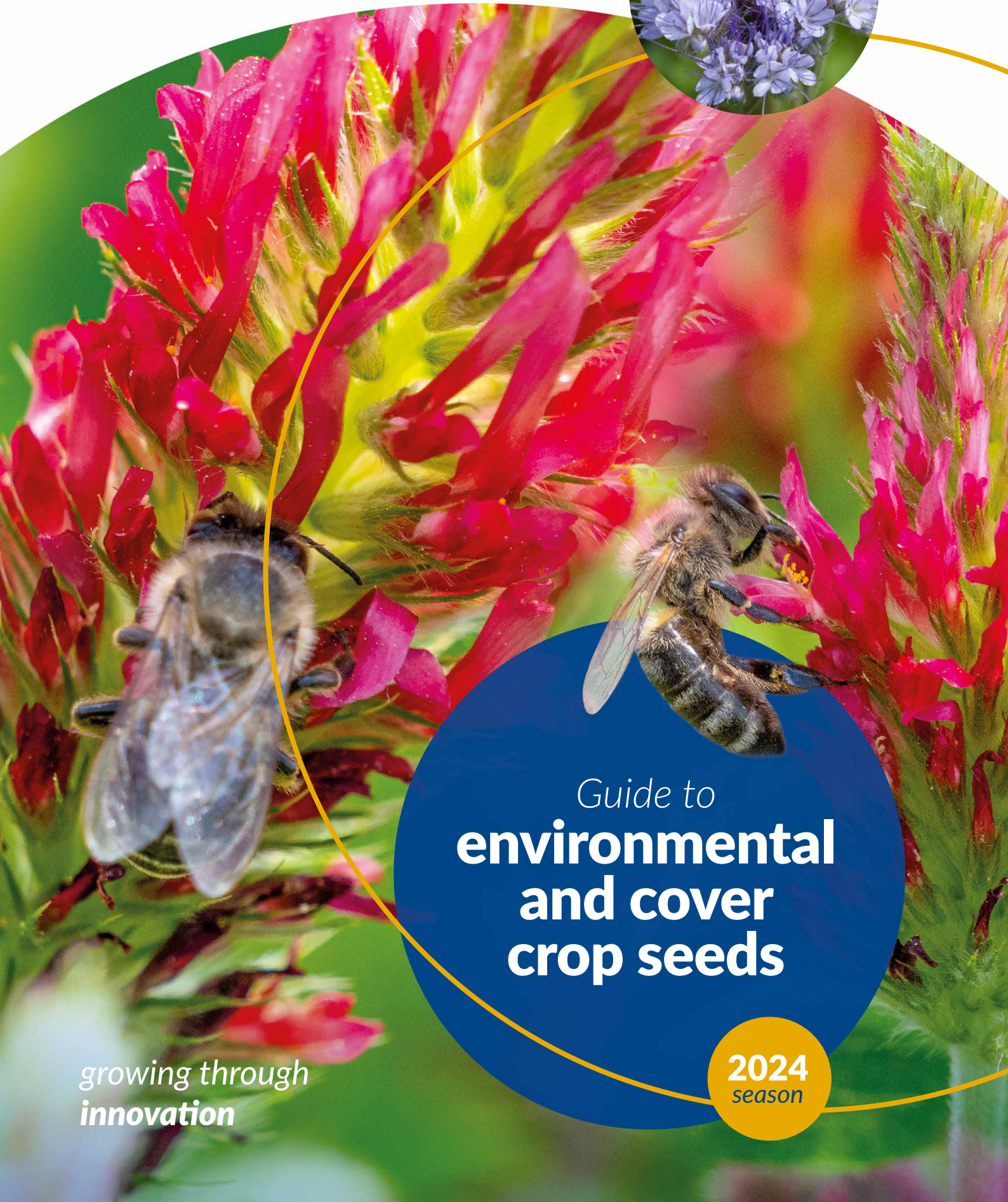




agrovista  
seeds



*Guide to*  
**environmental  
and cover  
crop seeds**

**2024**  
season

growing through  
**innovation**



# Welcome

## to our 2024 environmental and cover crop seeds brochure

Environmental stewardship has been a part of farming in the UK for over 30 years in one form or another, but the advent of the Sustainable Farming Incentive coupled with the phasing out of the Basic Payment Scheme has put the subject firmly in the spotlight.

Within the pages of this brochure, you will find a range of seed mixtures that have been developed to meet the requirements of a range of actions within both the Countryside Stewardship Scheme and the Sustainable Farming Incentive.

In addition, to this our well established range of cover crop seed mixtures, developed over the last 12 years through the ongoing work at our flagship Lamport soil health site in Northamptonshire is now in many cases suitable for use within the SFI SAM 2 multi species cover crop action. These mixtures have evolved over time with species selected for their ability to maximise biomass production both above and below ground whilst avoiding the issue of problematic volunteers further down the line.

The Agrovista range of environmental and cover crop seeds are the product of many years of experience and, when

grown in the way they are intended can deliver tremendous benefits in terms of soil health and fertility, livestock performance and biodiversity net gain.

We are farming under increasing scrutiny in the UK and public goods for public money is something that is now expected of all of us. The fact that we can deliver these public goods whilst improving our soils, maintaining the health and productivity of our livestock and reducing input costs has to be something we should all be grasping and I for one am proud to work in an industry that leads the world in sustainably responsible food production.



**NIGEL STORER**  
Forage and Environmental Seeds  
Technical Manager



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# Environmental stewardship mixtures

## Environmental stewardship mixture selector

Mixture	SFI/CSS compatibility	Arable land		Permanent crops		Permanent grassland		Page
		Arable crops	Temp grass	Horticultural	Non horticultural	Improved	Low input	
Pollen and nectar mixture	AHL1	✓	✓	✓				6
	AB1	✓	✓	✓				
Grasses and wildflowers	IPM 2	✓	✓	✓	✓			7
	AB8	✓	✓	✓				
Winter bird food mixtures	AHL 2	✓	✓	✓				8
	AB9	✓	✓	✓				
Legume fallow mixtures	NUM 3	✓	✓	✓				9
	AB15	✓	✓	✓				
Autumn sown bumblebird	AHL 2	✓	✓	✓				10
	AB16	✓	✓	✓				
Grass margin mixtures	AHL 3	✓	✓	✓				11
	IGL 1		✓			✓		
	AB3	✓	✓					
Herbal leys	SAM 3	✓	✓	✓		✓		12-14
	GS4	✓	✓	✓		✓		
Multi species cover crops	SAM 2	✓	✓	✓				15 and 22-26

The seed mixtures in this brochure have been designed to be compatible with a range of actions within the Countryside Stewardship Scheme (CSS) and the Sustainable Farming Incentive (SFI). However, these mixtures are no guarantee of compliance and should therefore be grown and managed in a way that can be reasonably expected to meet the aims of the action.



## Pollen and nectar mix



This pollen and nectar mixture has been developed to provide a food source for beneficial pollinators such as bumblebees, solitary bees, butterflies and hoverflies and to encourage the natural predators that feed on crop pests.

This forms part of an integrated pest management approach to crop protection.

When planted in close proximity to cropped areas the natural predators that these plots encourage can help to reduce the use of pesticides as well as improving overall biodiversity.

### Medium to heavy land

Vetch - common	50%
Red clover	20%
Alsike clover	9%
Birdsfoot trefoil	0.25%
Yarrow agricultural	0.25%
Yellow blossom clover	5%
Crimson clover	15%
Oxeye daisy non-native	0.25%
Black medick	0.25%

Pack size 15kg

Sowing rate 20kg/ha

### Light land

Sainfoin	40%
Vetch - common	45%
Clover red	10%
Birdsfoot trefoil	0.25%
Oxeye daisy	0.25%
Yarrow	0.25%
Yellow blossom clover	4.25%

Pack size 15kg

Sowing rate 20kg/ha

## Grass and wildflower mixtures



These diverse mixtures will provide foraging sites for invertebrates such as bumblebees, solitary bees, butterflies and hoverflies throughout the late spring and summer as well as providing valuable habitat for farmland birds such as Yellowhammers.

Sown into a warm, moist seedbed in late spring or summer the established mixture will produce flowers throughout the late spring and summer months providing a valuable source of pollen and nectar.

The tussocky grasses will also provide a valuable over wintering habitat for invertebrates and small mammals.

Strong creeping red fescue	40%
Hard fescue	15%
Smooth stalk meadow grass	5%
Red clover	1.5%
Chewings fescue	25%
Birdsfoot trefoil	0.5%
Lucerne	1.25%
Alsike clover	0.25%
Yarrow	0.25%

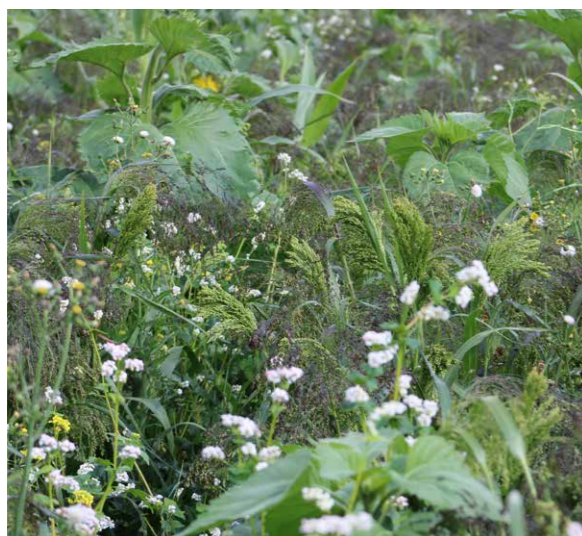
Ribwort plantain	0.5%
Sainfoin	3.75%
Common vetch	3.75%
Crimson clover	3%
White clover	0.25%

Pack size 10kg

Sowing rate 16-20kg/ha



## Winter bird food mixtures



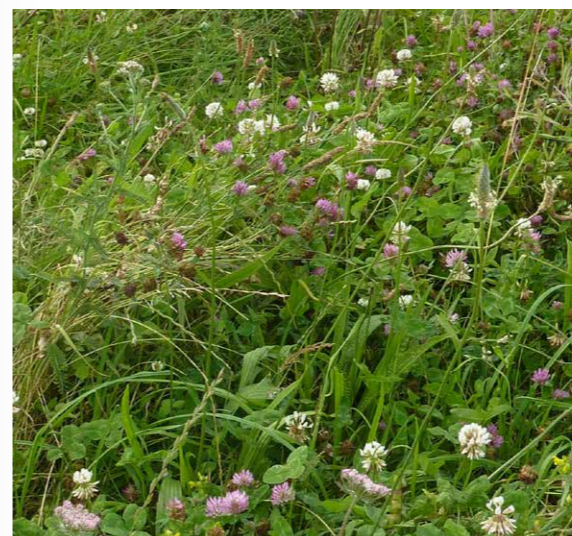
Winter bird food plots provide wild farmland birds with a source of small seeds throughout the autumn and winter months and provide pollinators with a source of pollen and nectar throughout the summer.

Our Take-all break mixture is designed to provide all the above benefits whilst providing cereal growers who suffer with Take-all in wheat, barley and triticale with a valuable break crop.

These mixtures need to be sown before the end of June, sowing post-harvest will not produce a seed crop for birds to feed on in the year of sowing and will not therefore meet the aims of any of the relevant schemes.

1 Year winter bird food mixture		2 Year winter bird food mixture		Take-all break mixture	
Spring triticale	45%	Spring triticale	30%	Linseed	36%
Spring barley	25%	Spring barley	35%	Spring oats	20%
Spring oats	20%	Spring oas	17%	Quinoa	10%
Quinoa	4%	Kale	6%	Dwarf sunflower	10%
Gold of pleasure	2.5%	Gold of pleasure	4%	Gold of pleasure	8%
Dwarf sunflower	3.5%	White millet	8%	White millet	9%
				Forage rape	7%
<b>Pack size</b>	20kg	<b>Pack size</b>	20kg	<b>Pack size</b>	20kg
<b>Sowing rate</b>	40kg/ha	<b>Sowing rate</b>	40kg/ha	<b>Sowing rate</b>	40kg/ha

## Legume fallow mixtures



Legume fallow mixtures are a useful tool for managing nutrient efficiency, improving soil structure and health and also provide food for farmland wildlife, such pollinators including bumblebees, solitary bees, butterflies and hoverflies throughout late spring and summer months as well as providing food for chicks.

Legume fallow mixtures can also be a useful part of a rotation aimed at reducing blackgrass populations, the inclusion of grasses can be particularly useful for smothering blackgrass.

The grasses used in the Agrovista legume fallow with grasses mixture have been shown to be more effective than ryegrasses when it comes to reducing blackgrass populations.

Legume fallow with grasses		Legume fallow mixture	
Strong creeping red fescue	15%	Common vetch	50%
Smooth stalked meadow grass	5%	Sainfoin	25%
Common vetch	50%	Alsike clover	5%
Alsike clover	5%	Lucerne (inoculated)	10%
Lucerne (inoculated)	7%	Red clover blend	9%
Red clover blend	15%	Birds foot trefoil	1%
Birds foot trefoil	0.5%		
Black medick	2.5%	<b>Pack size</b>	20kg
		<b>Sowing rate</b>	15-20kg/ha
<b>Pack size</b>	20kg		
<b>Sowing rate</b>	30-35kg/ha		





## Autumn sown bumblebird mix



This mixture provides food resources for farmland birds such as tree sparrow and corn bunting as well as a range of nectar feeding insects such as butterflies, bumblebees and solitary bees on arable and mixed farms.

Whilst the mixture is primarily designed to meet the aims of the Countryside Stewardship AB16 action it is also suitable for the AHL2 winter bird food action within the Sustainable Farming Incentive (SFI).

Winter triticale	30%
Winter wheat	25%
Gold of pleasure	5%
Fodder radish	6%
Kale	5%
Winter linseed	10%
Alsike clover	4%
Birds foot trefoil	0.5%
Crimson clover	4%

Winter vetch	6%
Phacelia	1.5%
Lucerne (inoculated)	3%
<b>Pack size</b> 20kg	
<b>Sowing rate</b> 40-50kg/ha	

## Grass margin mixtures



These long lasting tussock forming grass mixtures are ideal for reducing soil erosion, preventing leaching of surplus nutrients and providing habitat for invertebrates, small mammals and ground nesting birds.

These mixtures are suitable for a wide range of uses from creating beetle banks to providing a hard wearing headland buffer around cropped areas.

### Grass margin with cocksfoot

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

<b>Pack size</b>	20kg
<b>Sowing rate</b>	30kg/ha

### Grass margin without cocksfoot

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

<b>Pack size</b>	20kg
<b>Sowing rate</b>	30kg/ha



## TechniSward herbal leys



These highly successful leys have been produced to provide grazing livestock with high quality nutrition whilst also meeting the requirements of the GS4 countryside stewardship scheme and the SFI SAM3 herbal leys action.

With that in mind these leys are principally aimed at livestock producers rather than arable farmers looking to build soil structure and fertility whilst taking advantage of the scheme payments. However, arable producers wanting to optimise income from letting grazing to sheep producers may also benefit from the higher quality of these swards.

### Medium to heavy land

Lofa <i>Festulolium</i>	25%
Nolwen (T) <i>Intermediate perennial ryegrass</i>	24%
Donata <i>Cocksfoot</i>	12%
Winnetou <i>Timothy</i>	10%
Laura <i>Meadow fescue</i>	5%
Red clover blend	10%
Alsike clover	4%
Birdsfoot trefoil	0.5%
Yellow trefoil	0.25%
Plantain	4%
Chicory	1%
Sheeps burnet	2.5%
Sheeps parsley	1.5%
Yarrow	0.25%

Pack size	20kg
Sowing rate	30-35kg/ha

### Light land

Hipast <i>Festulolium</i>	20%
Nolwen (T) <i>Intermediate perennial ryegrass</i>	14%
Donata <i>Cocksfoot</i>	16%
Winnetou <i>Timothy</i>	7%
Laura <i>Meadow fescue</i>	4%
Atlaswede red clover	10%
Sainfoin	17%
Lucerne	4%
Birdsfoot trefoil	0.5%
Plantain	3.5%
Chicory	1%
Sheeps burnet	1.75%
Sheeps parsley	1%
Yarrow	0.25%

Pack size	20kg
Sowing rate	30-35kg/ha

Mixture composition may change subject to availability. Mixtures containing Alsike clover are not suitable for horses. For our Herbal horse paddock mixture please see our TechniSward grass seed brochure

## Herbal leys



The Agrovista stewardship herbal ley is designed to deliver all the soil health benefits that these leys are capable of but is not as productive in livestock terms as the TechniSward herbal leys and so is principally aimed at arable rotations.

The short term cut and graze mixture is capable of three years full production and could be aimed at livestock farmers looking for a cheaper rotational mixture without compromising on forage quality or at arable farmers looking for a simpler mixture with more rapid establishment.

### Stewardship herbal ley

Festulolium	20%
Tetraploid <i>Intermediate perennial ryegrass</i>	25%
Cocksfoot	10%
Tall fescue	10%
Creeping red fescue	15%
Red clover	4%
Alsike cover	3%
Sainfoin	6.5%
Birdsfoot trefoil	0.5%
Plantain	2%
Fenugreek	2%
Sheeps burnet	1%
Sheeps parsley	0.75%
Yarrow	0.25%

Pack size	14kg
Sowing rate	30-35kg/ha

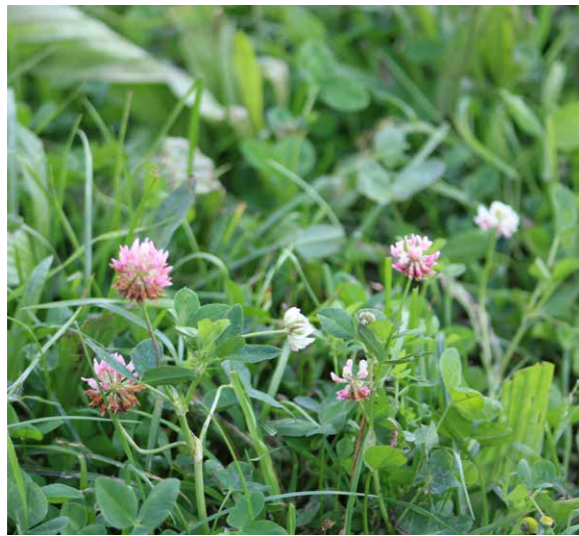
### Short term herbal cut and graze

Festulolium	27%
Hybrid ryegrass	36%
Cocksfoot	8%
Red clover	12%
Alsike clover	5%
White clover blend	4.5%
Plantain	4%
Sheeps burnet	2%
Sheeps parsley	0.25%
Yarrow	0.25%

Pack size	20kg
Sowing rate	30-35kg/ha

Mixture composition may change subject to availability. Mixtures containing Alsike clover are not suitable for horses. For our Herbal horse paddock mixture please see our TechniSward grass seed brochure

## Herbal overseeding mixtures



These herbal overseeding mixtures have been designed for topping up existing herbal leys across most soil types to extend their productive life and ensure compliance.

As with all overseeding success is reliant on good practice. Overseeding should take place in mid to late summer as the growth rate of existing grasses slows. Seed to soil contact is critical so using a slot seeder and rolling is strongly advised.

### Herbal overseeding with grass

<b>Lofa</b> <i>Festulolium</i>	7%
<b>Donata</b> <i>Cocksfoot</i>	10%
<b>Winnetou</b> <i>Timothy</i>	8%
<b>Red cover blend</b>	30%
<b>Alsike clover</b>	10%
<b>Dual purpose white clover blend</b>	15%
<b>Birdsfoot trefoil</b>	1%
<b>Plantain</b>	12%
<b>Sheeps burnet</b>	3%
<b>Sheeps parsley</b>	3%
<b>Yarrow</b>	1%

<b>Pack size</b>	20kg
<b>Sowing rate</b>	15-20kg/ha

### Herbal overseeding without grass

<b>Red clover</b>	40%
<b>Alsike clover</b>	10%
<b>White clover blend</b>	15%
<b>Birdsfoot trefoil</b>	5%
<b>Plantain</b>	20%
<b>Sheeps burnet</b>	5%
<b>Sheeps parsley</b>	3%
<b>Yarrow</b>	2%

<b>Pack size</b>	20kg
<b>Sowing rate</b>	10-15kg/ha

## Multi species winter cover crops for maize growers



One of the most reliable ways to establish a cover crop to provide soil protection over the winter months is to establish it with the growing maize crop. Left in place post-harvest these well-established cover crops protect the soil from erosion and mop up surplus nutrients.

If undersowing is not possible or desirable, then the After-maize cover crop mixture is a good option. This mixture is very fast to establish at a time of year when most mixtures struggle. The resulting crop provides good over winter ground cover and can go on to provide a valuable early silage cut.

All SAM2 winter cover crops must be established in time to provide good soil protection through the winter months of December, January and February.

### TechniSward SoilMax maize undersowing mixture

<b>Tower</b> <i>Tall fescue</i>	50%
<b>Hipast</b> <i>Tall fescue plus (festulolium)</i>	40%
<b>Donata</b> <i>Cocksfoot</i>	10%

- Designed to be sown at the same time as the maize crop
- Slow growing species suppress weeds without competing with the growing maize crop
- Deep roots help retain surplus nutrients and reduce soil erosion
- Sow at 7.5-12.5kg/ha

### Agrovista FastMax maize undersowing mixture

<b>Lofa</b> <i>Festulolium</i>	30%
<b>Diploid</b> <i>Italian ryegrass</i>	60%
<b>Donata</b> <i>Cocksfoot</i>	10%

- Designed to be sown at the 4-6 leaf stage
- Rapid early establishment slows as the maize canopy closes and then grows quickly post-harvest to provide good winter cover
- Capable of providing an early cut of silage the following spring
- Sow at 7.5-12.5kg/ha

### TechniSward EnviroMax maize undersowing mixture

<b>Twymax</b> ( <i>T</i> ) <i>Late perennial ryegrass</i>	70%
<b>Hipast</b> <i>Tall fescue plus (festulolium)</i>	20%
<b>Donata</b> <i>Cocksfoot</i>	10%

- Designed to be sown at the 4-6 leaf stage
- Establishment is quicker than with SoilMax ensuring establishment before canopy closure
- Deep roots help retain surplus nutrients and reduce soil erosion
- Provides good quality winter grazing
- Sow at 7.5-12.5kg/ha

### Agrovista After maize cover crop

<b>Westerwolds</b> <i>Ryegrass</i>	56%
<b>Winter Vetch</b>	44%

- A fast-establishing winter cover crop for sowing after maize
- Goes on to provide an early cut of high protein silage the following spring
- Sow at 12-15kg/ha before mid-October

Mixture composition may change subject to availability. Mixtures containing Alsike clover are not suitable for horses. For our Herbal horse paddock mixture please see our TechniSward grass seed brochure



# 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.



Cover crops can undoubtedly help to mop up residual nutrients in the soil, and then hold them in a stable forms before releasing them ready for the following commercial crop.

## 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.

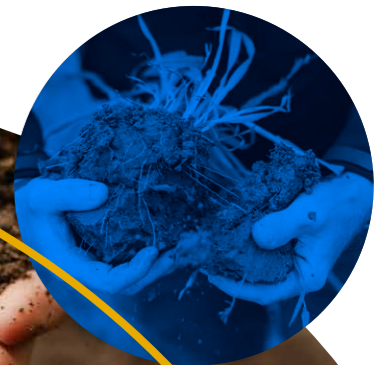
Specific cover crops usually based around black oats are sown in the autumn, acting as a trap crop. Black oats have an initial open growth habit, allowing problem grass-weeds to germinate amongst them.

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.

“

*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*





### 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.

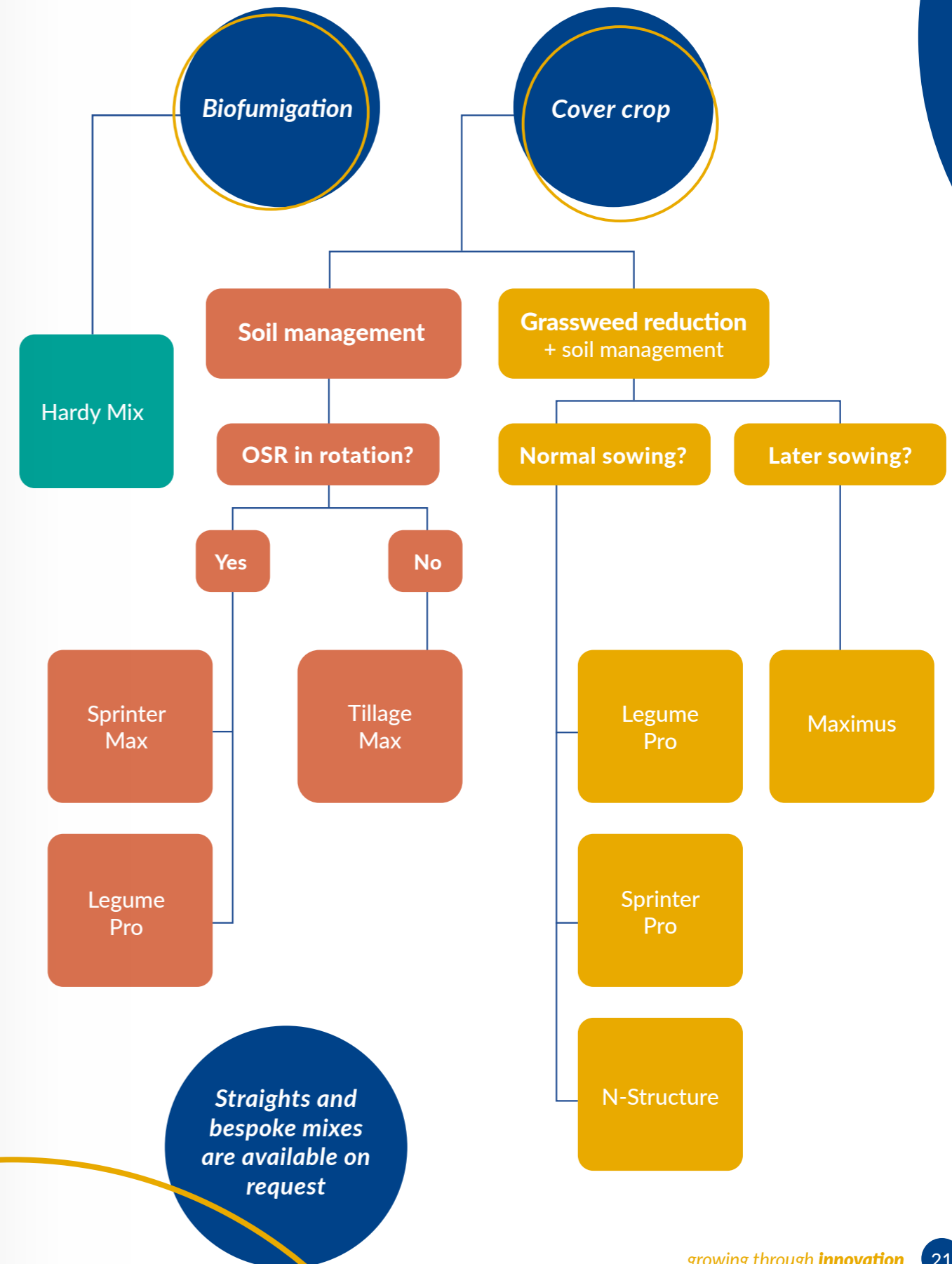
Where covers consist of lower C:N ratios, such as vetch, early destruction is less important, especially on lighter land. Growers who own specialist drills that work in a standing cover crop can spray just before or just after sowing the following crop.

**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 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												
Sowing rate	15 kg/ha	Sowing depth	10-15 mm									
SFI - under current legislation complies with SAM2	✓	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 "Lampton 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												
Sowing rate	20-25 kg/ha	Sowing depth	15-25 mm									
SFI - under current legislation complies with SAM2	✓	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 "Lampton 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												
Sowing rate	15-20 kg/ha	Sowing depth	10-15 mm									
SFI - under current legislation complies with SAM2	✓	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												
Sowing rate	10 kg/ha	Sowing depth	10-15 mm									
SFI - under current legislation complies with SAM2	✓	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												
Sowing rate	10 kg/ha	Sowing depth	10-15 mm									
SFI - under current legislation complies with SAM2	✓	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												
Sowing rate	15-25 kg/ha	Sowing depth	15-25 mm									
SFI - under current legislation complies with SAM2	✓	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												
Sowing rate	15 kg/ha	Sowing depth	15-25 mm									
SFI - under current legislation complies with SAM2	✓	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	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC
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	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC
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	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC
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	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC
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	 JAN FEB MAR APR MAY JUN JULY AUG SEP OCT NOV DEC
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







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