



COVER CROP MIXES

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by livestock is planned please refer to guidance notes on page 17.

Our agronomists have considerable experience of using these crops to benefit growers and provide the correct solution to match their objectives.

Certified organic seed mixes can be supplied upon request.

Please always take the opportunity to discuss with your local Hutchinsons contact and consider the many important agronomic factors that may be relevant to you before deciding.

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Species description

	Linseed	Thin, upright plant that is easy to establish and develops a thin tap root with fine, fibrous branches that condition soils and extract moisture well. Not frost tolerant but will stand through the winter.
Buckwheat		Very fast growing, upright annual plant that is effective at scavenging phosphate from a fine, fibrous root system. Can reach maturity in eight - ten weeks, providing a pollen and nectar source. Helps suppress weed growth but will die at the first sign of frost. Do not graze pre-frost as it can cause photosensitivity in livestock.
	Phacelia	A fast establishing annual which covers the ground quickly with vigorous top growth and develops a moderately extensive root system. It is also quick to reach maturity and is very frost tolerant. Will need managing to prevent seed return. Good at holding nitrogen.
	Daikon radish (tillage)	Annual with a very thick, deep tap root which can be effective at breaking through tight or compacted soils. Radish species are excellent nitrogen scavengers. Intermediate top growth which covers the soil well to compete with weeds. Not winter hardy but good persistence, may bolt if drilled too early.
<u>ia</u>	Fodder radish (oil) Annual radish with larger top growth than Daikon but a narrower, deep penetratin	
Fodder radish (oil) Brown mustard	Produces a deep tap root and very short leafy top growth but can be slow to develop. The C:N ratio of brown mustard is much lower than that of white mustard meaning it releases nitrogen much quicker. It is also much more winter hardy than white mustard.	
	White mustard	Faster growing mustard, more suitable for shorter term catch crops. Will develop woody stem growth if left for longer periods, increasing the C:N ratio meaning slower nutrient release and residue may block drilling equipment.
	Hairy vetch	Annual legume with a sprawling, creeping growth habit. Vigorous root and top growth with good frost tolerance. Low C:N ratio.
Legume	Crimson clover	Rapidly growing annual clover with broad leaves. Low growing. Limited frost tolerance. Low C:N ratio.
_	Berseem clover	Fast establishing clover with a finer vigorous root system and narrower leaves. Very low frost tolerance. Ideal for shorter term catch crops and companion planting.
C4 Annual	Japanese reed millet / Red millet	Annual C4 warm season grass. Grows rapidly in warm temperatures with less water requirement. Large, thick root mass. Low C:N ratio when terminated early.

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MaxiCover provides fantastic diversity in root growth.

Its varied root depth and architecture helps to aggregate soil and create drainage channels.

Various types of plant canopy offer excellent soil armour and weather protection.

The mix contains legumes, forbs and brassicas which provide a varied food source for soil microbes.

The diversity of the mix and a low inclusion rate of each plant type reduces the risk of exacerbating rotational pest or disease issues.

This mix should be drilled as soon as possible in the summer, following harvest of the previous crop, and no later than early September.

SPECIFICATION

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SPECIES	% (seeds/m²)
Linseed	26.3
Buckwheat	7.3
Phacelia	13.9
Daikon radish	2.9
Fodder radish	5.1
Brown mustard	16.1
Hairy vetch	3.6
Crimson clover	24.8

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SPECIES % (seeds/m²) Linseed 40.2 **Buckwheat** 4.8 Phacelia 8 **Daikon radish** Fodder radish 6.4 **Brown mustard** 12.9 **Hairy vetch** 3.6 **Crimson clover** 16.1

MaxiRooter

Seed Rate: 12.5 kg/ha (25kg pack)

MaxiRooter can be used to alleviate minor shallow compaction or slumping issues by favouring species with larger, vigorous root systems.

Linseed has a very fibrous root mass which spreads well throughout the upper soil layer. This is used in combination with higher levels of the deeper rooting brassica species, in particular Daikon radish (also known as tillage radish).

The aim with **MaxiRooter** (more so than with the other mixes) is to save a cultivation pass, using 'roots not iron' to repair damage and create a friable soil for establishment of the following crop.

Careful examination of the soil prior to planting this mix will help to determine whether the intended outcome is achievable or if targeted subsoiling should be used alongside this cover crop.

This mix should be drilled as soon as possible in the summer, following harvest of the previous crop, and no later than early September.



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For example, those who regularly grow brassica cash crops in rotation and have associated issues with soil borne pathogens, must avoid brassicas in cover crops so the problem doesn't get worse.

This mix is brassica free but keeps the remaining five species of the over-winter range. Therefore it still provides a good level of plant diversity and number of key benefits, including Nitrogen fixing legumes.

MaxiVeg is suitable for any soil type and should be drilled as soon as possible in the summer, following harvest of the previous crop, but by the end of August.

SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	33.9
Buckwheat	8.5
Phacelia	18.6
Hairy vetch	6.8
Crimson clover	32.2

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SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	18.1
Fodder rape	12.5
Smart radish	10.4
Stubble turnip	13.9
Winter vetch	10.4
Crimson clover	34.7

MaxiGraze

Seed Rate: 15 kg/ha (25kg pack)

MaxiGraze is the ideal choice for those wishing to strike a balance between improving soil health and providing better forage for grazing.

Single-species forage crops grown over-winter deliver very few of the key soil health benefits that a multi-species cover crop does. Generating forage for sheep or cattle is important for some, so with this mix you have the option to do both.

Forage rape, smart radish and **stubble turnip** are three brassica species which provide the bulk of the forage in this mix. Due to their three different growth habits, canopy and root types, they still satisfy the requirement for diversity within the mix.

Smart radish has a thick tap root but also has lateral roots which explore the soil horizontally. It also produces a large amount of top growth for forage.

Winter vetch and **crimson clover** provide quality forage as well as Nitrogen fixation and further diversity of root growth. **Linseed**, whilst not as palatable as the other species, will be grazed and provides the all-important soil stability from its fine, fibrous root system.

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MaxiSpectrum

Seed Rate: 40 kg/ha (25kg pack)

MaxiSpectrum delivers maximum species diversity with 15 species from five plant families: forbs, brassicas, legumes, cereals, grasses and chenopods.

The plants in this mix will provide many different types of canopy architecture, root structure and growth habit which in turn provide a multitude of benefits to the soil, environment and following crop.

Every root type explores the soil in a different way and to different depths which helps to create excellent friable soil. The range of species all have their strengths in terms of extracting nutrients from the soil which means that overall nutrient cycling should be enhanced for the benefit of the following cash crop. Each species also produces slightly different root exudates and therefore interacts with soil microbes in their own unique way. This should result in an uplift of the total microbial population as well as supporting a more diverse population.

MaxiSpectrum also includes the "magic five" species recommended by Dr Caligari, a Brazilian scientist and leading expert on cover crops, who suggests that these five plant families grow symbiotically together and produce a mass of phenolic compounds. These compounds are powerful antioxidants, they stimulate soil life and fast track the formation of humus and therefore soil structure

SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	10.5
Buckwheat	5.7
Phacelia	6.7
Sunflower	1.8
Quinoa	7.9
Daikon radish	1.6
Fodder radish	2.1
Brown mustard	5.2
Fodder rape	5.2
Hairy vetch	3.9
Crimson clover	18.4
Small blue pea	3.1
Spring oat	7.3
Forage rye	8.4
Japanese reed millet	12.1

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SPECIFICATION

SPECIES	% (seeds/m²)
Creeping red fescue	21.8
Crested dogstail	13
Sheep fescue	25.3
Sainfoin	18.3
Ermo alsike	0.6
Iona white clover	1.5
Hairy vetch	8.7
Birdsfoot trefoil	2.8
Ox eye daisy	1.2
Yellow rattle	0.1
Yarrow	0.2
Sheeps burnet	4.5
Black medick	2

MaxiFruit

Seed Rate: 35 kg/ha (25kg pack)

Soil between fruit rows is frequently run on by machinery through the growing season, which can cause compaction problems in orchards, hop yards and vineyards.

MaxiFruit has been developed to provide all the benefits of cover crops, as well as hold up machinery better through its deep and diverse root types.

It is a perennial, grass-based mix that also includes a number of legume and herb species. The species don't grow too tall so avoid potential agronomic issues. During the growing season it can be mown to manage the height which gives the opportunity to throw the cuttings under the fruit trees, providing a weed suppressive mulch and also contributing nutrients and organic matter.



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MaxiInterCrop

Seed Rate: 11 kg/ha (25kg pack)

MaxiInterCrop is designed to provide shorter term summer cover in a variety of situations on all soil types.

This mix may be used in front of an autumn sown cash crop, for example, after carrots harvested winter/early spring, after vining peas, or after wholecrop cereals (AD or feed).

This mix contains forbs, legumes, brassicas and also a C4 plant in the form of millet, a warm season grass species. C4 plants thrive in the warmer summer months and develop fantastic root systems in a short period of time as well as fixing significantly more carbon than C3 plants. High levels of sugary root exudates offer a great food source for soil microbes. C4 plants also have a high drought tolerance.

This mix can be established from late April onwards but may require managing well in advance of the following crop to prevent it going to seed.

SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	13.9
Buckwheat	11
Phacelia	18.7
White mustard	16.2
Berseem clover	27
Red millet	13.2

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CATCH CROP MIXES



SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	26.8
Buckwheat	15.4
White mustard	20.2
Berseem clover	37.6

MaxiCatchCrop

Seed Rate: 11 kg/ha (25kg pack)

MaxiCatchCrop can be used on any soil type and is designed to fill a gap of approximately six — eight weeks between cash crops. Between Oilseed Rape and Winter Wheat is a good example, providing a way of capitalising on every opportunity in the rotation to introduce diversity and living roots. This mix has also been effective as a late sown option when timings are compromised due to its fast-growing species. Cereals can be added to bulk it out.

All four chosen species are fast to establish and grow away quickly, a very important characteristic considering the short growing window.

Buckwheat is very effective at scavenging for phosphate and has the potential to increase P availability in the rhizosphere. It is also the fastest establishing cover crop species of all those used in the Hutchinsons range.

Berseem clover has impressed with its speed of growth and vigorous rooting, and brings the added benefit of Nitrogen fixation.

White mustard is the fastest growing of the mustard species and provides good biomass as well as a strong tap root.

Linseed is a reliable establisher especially during the summer months that will provide a cobweb like mass of structuring roots that benefit both light and heavy soil types.

This mix must be sown immediately behind the combine in order for it to be as effective as possible. Soil moisture levels must be considered and will determine the success of establishment.



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Maxilmpact

Seed Rate: 11 kg/ha (25kg pack)

Maxilmpact is designed to do exactly that, make a visual impact. The six species chosen for this mix produce a range of vibrant colours during flowering to deliver a powerful visual impact in the landscape as well as providing a pollen and nectar source, a haven for birds, pollinators, beneficial insects and natural predators.

There are a number of opportunities to utilise this mix across the farm including along headlands of cash crop fields to encourage beneficial insects, or as part of a wildlife corridor through the farm. It could also be planted on the internal headlands of vegetable fields or around the outside of vineyards and orchards.

Again, diversity of species is delivering multiple benefits to both soil life and the life above the soil. A range of flowering periods will provide high quality habitat throughout the summer.

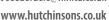
This mix is designed to be drilled from late April onwards and last through to the autumn.

SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	28.9
Buckwheat	4.8
Phacelia	14.3
Dwarf sunflower	1.9
Crimson clover	23.5
Berseem clover	26.6

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SPECIFICATION

SPECIES	% (seeds/m²)
Buckwheat	6
Berseem clover	94

Compliant with the Sustainable Farming Incentive IPM3 action.

Seed Rate: 5 kg/ha (25kg pack)

Companion species are increasingly used in various crops which can have a number of positive effects.

Hutchinsons has introduced this companion mix for use with Oilseed Rape (OSR), specifically for the following reasons:

- To introduce species diversity to a monoculture crop.
- To provide a nectar source in OSR crops during late summer.
- Buckwheat and berseem clover are fast growing species with vigorous root systems, this can help the OSR roots to develop quicker by following the root channels of the companion plants.
- **Buckwheat** has the potential to increase P availability in the rhizosphere.
- Berseem clover fixes atmospheric N which will in turn be made available to the OSR crop.

MaxiCompanion can be added to the OSR seed and drilled together, or separately for those who have a drill with split hoppers.

Companion species are susceptible to frosts. Discuss herbicide strategies with your Hutchinsons agronomist to get the best from this mix.

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SPEAK TO US FOR SPECIFIC ADVICE ON THIS MIX



Five other legume species are included of short and medium term lifespan partnered with fast and intermediate establishment periods. This allows for a phased establishment and sward duration to optimise the performance of this crop partnering rotational option. The phased approach to establishing the long-term white clover element means that the final clover population is supportive rather than competitive with the cash crop.

Containing six flowering species allows for Sustainable Farming Incentive (SFI) NUM3 legume fallow funding to be utilised during the establishment phase. Flexibility within the SFI means that NUM3 funding could be applied for one, two or three years before the established understory is utilised within the cash crop rotation.

The fast establishing, early flowering components of this mix will meet the objectives of NUM3 in the first year.

Siting and establishment of **MaxiUnderstory** should be well considered and planned in advance as this is intended as a rotational option of at least five years duration before reseeding may be required. It is therefore of key importance that compromised soil conditions or large background weed population situations should be avoided.

SPEAK TO US FOR SPECIFIC ADVICE ON THIS MIX

SPECIFICATION

SPECIES	% (seeds/m²)
White clover	64.5
Altaswede red clover	2.6
Birds foot trefoil	4
Virgo trefoil	8.1
Aslike clover	17.1
Crimson clover	3.7

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	۸۰	vil	May June			July August				Contombox		
	April		May		June		July		August		September	
	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
MaxiCover								100	100	100	120	
MaxiRooter								100	100	100	120	
MaxiVeg								100	100	100	130	
Maxi Graze							100	100	100	100	130	
MaxiSpectrum							100	100	100	120		
MaxiFruit		100	100	100	100	100	100	100	100	120		
MaxiInterCrop		100	100	100	100	100	100	100	120			
MaxiCatchCrop							100	100	100	100	130	
Maxilmpact	100	100	100	100	100	100	100	100	120			

These rate adjustments relate specifically to the Hutchinsons range of mixes and should not be transferred to other cover crop mixes.

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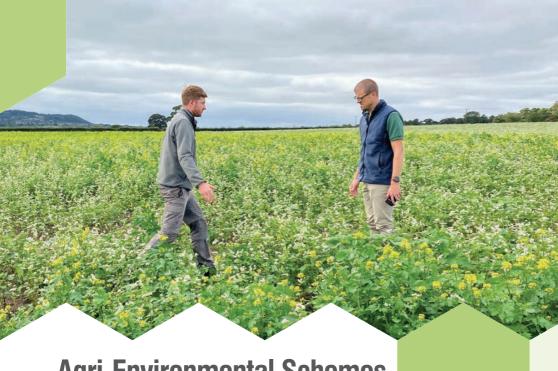












Agri-Environmental Schemes

The Sustainable Farming Incentive (SFI) pays growers to maintain sustainable farming practices which go above and beyond basic regulatory requirements.

The scheme can protect and enhance the natural environment alongside food production whilst supporting farm productivity. The SFI scheme has been broken down into themes which create a menu of actions in a 'pick and mix' approach, some of which can be rotated and moved around the farmed area.

For more information, speak to your agronomist or our Environmental Services team on enviro@hlhltd.co.uk

www.hutchinsons.co.uk/our-services/environmental-services

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