





Introduction

Catch and cover crops are now increasingly used across all sectors of crop production for many reasons, including their ability to improve key soil functions, add organic matter and cycle nutrients for the following crop. Our agronomists have considerable experience of using these crops to benefit our customers and provide the correct solution to match their objectives.

Hutchinsons are very pleased to be able to offer our own range of catch and cover crop mixes, updated and added to for 2021, specifically designed to maximise the benefits of their use.

These mixes have been constructed around the reliability of the individual species and their ability to deliver key agronomic advantages and improvements in soil health.

Technical justification has been the driver in the selection of each species and the key aim with each mix has been to provide as much diversity as possible, while considering cost, reliability and confidence in performance.

Our core over-winter mixes all use the same eight species, with ratios of each adjusted according to the situation in which they are placed. Working consistently with the species ensures confidence in delivering the intended outcomes.

Our catch crop mixes present a great opportunity for those with more restrictive rotations to gain improvements in soil health, but also an additional opportunity for those already using cover crops.

For 2021 new specialist mixes have been added alongside our existing range, to better meet the needs of our customers - offering something for everyone. Please always take the opportunity to discuss these mixes with your local Hutchinsons contact before making a decision and consider the many important agronomic factors that may be relevant to you.

Occasionally, shortages of seed of some cover crop species may occur throughout the season. Hutchinsons therefore reserve the right to alter the specifications of any of the mixtures in this range should a shortage occur. Hutchinsons will always ensure that any alterations do not render a mixture unsuitable for its intended use.

Any alteration to the mixture will be clearly shown on the bag label.

Our standard terms and conditions apply, these are outlined on the reverse of our invoices.

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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

Speak to your Hutchinsons agronomist for advice on getting the best from your cover crops. Seed Rate: 12.5 kg/ha (2ha pack)

A multi-purpose over-winter mix which suits a wide range of situations and soil types.

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 provides 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.

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situations and soil types but offers the opportunity to maximise nitrogen fixation with a high ratio of legumes. With the correct management techniques, rates of manufactured nitrogen can be reduced in the following crop.

Hairy vetch has been shown to produce a higher biomass, more quickly than other vetch and clover species. **Crimson clover** is fast to emerge and grows vigorously.

With the exception of **Daikon radish**, which can store high quantities of N in its large tap root, the brassica content of this mix is significantly lower than in **MaxiCover**.

With the same eight species, the diversity of roots and canopy remains, delivering all of the same benefits as the **MaxiCover** with the addition of

high N fixation.

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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SPECIFICATION

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SPECIES	% (seeds/m²)						
Linseed	9.5						
Buckwheat	4.4						
Phacelia	10.2						
Daikon radish	2.9						
Fodder radish	2.9						
Brown mustard	11.7						
Hairy vetch	10.9						
Crimson clover	47.4						

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SPECIFICATION

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

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Seed rate: 12.5 kg/ha (2ha 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.

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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 that the problem does not get worse.

This mix is brassica free but keeps the remaining five species of the over-winter range and so still provides a good level of plant diversity and therefore a 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, and no later than early September.

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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				

Speak to your Hutchinsons agronomist for advice on getting the best from your cover crops. **MaxiGraze**

Seed rate: 15 kg/ha

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

Whilst single species forage crops, grown over-winter could technically be called cover crops, they deliver very few of the key soil health benefits that a multi species cover crop does. That said, 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 and 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.

Please note that all the Hutchinsons catch and cover crop mixes can be grazed, but **MaxiGraze** offers a more tailored mix for those who require it.



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COVER CROP MIXES

MaxiSpectrum

Seed rate: 40 kg/ha

MaxiSpectrum delivers maximum species diversity with 15 species from the following 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, the environment and the 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 species (cereals, grasses, chenopods, brassicas and legumes) 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.

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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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Regardless of the crop type or farming system, the health of the soil is always essential to deliver high quality produce in a sustainable way. Cover crops are used in combinable crop systems to improve soil function, raise organic matter, improve fertility and build biological activity. This in turn supports healthy, nutrient dense crops which are better able to fight off pests and diseases and cope with extremes in weather. So why should fruit crops be any different?

The added challenge in orchards, hop yards and vineyards etc. is that the soil between the fruit rows is run on by machinery frequently through the growing season, which can cause compaction problems.

So **MaxiFruit** has been developed to provide all the soil benefits mentioned above, as well as hold up machinery better through its deep and diverse root types. It is a perennial, grass-based mix but includes a number of legume and herb species. It is also made up of species which do not grow too tall, to 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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2.8

1.2

0.1

0.2

4.5

2

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Birdsfoot trefoil

Ox eye daisy

Yellow rattle

Yarrow

Sheeps burnet

Black medick



MaxiInterCrop

Seed Rate: 11 kg/ha

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

This mix performed exceptionally well in 2020 when used in fields that were left fallow after a very wet Autumn/Winter 2019. It helped to repair damaged soils, return organic matter and make use of the summer sun to pump carbon rich root exudates into the soil, feeding soil biology. It also fixed and cycled nutrients for the perfect entry into a cash crop in Autumn 2020.

Most years, this mix may be used in front of an autumn sown cash crop either after carrots harvested winter/early spring, after vining peas or after wholecrop cereals (AD or feed), to name a few examples.

Again, this mix contains forbs, legumes and brassicas but also includes 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 termination well in advance of the following crop to prevent it going to seed.

SPECIFICATION

SPECIES	% (seeds/m²)
Linseed	12.3
Buckwheat	9.3
Phacelia	15.4
White mustard	13.6
Berseem clover	30.9
Japanese reed millet	18.5

Please speak to your Hutchinsons agronomist for more specific advice on this mix.

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SPECIFICATION

SPECIES	% (seeds/m²)
Buckwheat	23.5
White mustard	21.2
Berseem clover	55.3

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Seed rate: 11 kg/ha

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.

All three 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 this 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.

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



Maxilmpact

Seed Rate: 11 kg/ha

MaxiImpact 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				
Berseem clover	26.7				
Crimson clover	23.5				

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Species Description 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.

Very fast growing, upright annual plant that is effective at scavenging phosphate Forb from a fine, fibrous root system. Can reach maturity in eight - ten weeks, providing **Buckwheat** 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. A fast establishing annual which covers the ground quickly with vigorous top growth and Phacelia 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. Annual with a very thick, deep tap root which can be effective at breaking through **Daikon radish** tight or compacted soils. Radish species are excellent nitrogen scavengers. (tillage) Intermediate top growth which covers the soil well to compete with weeds. Not winter hardy but good persistence, may bolt if drilled too early. Fodder radish (oil) Annual radish with larger top growth than Daikon but a narrower, deep penetrating root. Brassica 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 **Brown mustard** meaning it releases nitrogen much quicker. It is also much more winter hardy than white mustard.

White mustard
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.

Crimson clover Rapidly growing annual clover with broad leaves. Low growing. Limited frost tolerance. Low C:N ratio.

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.

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.

Faster growing mustard, more suitable for shorter term catch crops.



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Berseem clover

Japanese

reed millet





	April May		ay	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								90	100	100	120	150	
MaxiN								90	100	100	120	150	
MaxiRooter								90	100	100	120	150	
MaxiVeg								90	100	100	130	160	
MaxiGraze							90	90	100	100	130		
MaxiSpectrum							90	100	100	110			
MaxiFruit		100	100	100	100	100	100	100	100	120			
MaxiInterCrop		100	100	100	100	100	100	100					
MaxiCatchCrop							100	100	100	100	120		
Maxilmpact	100	100	100	100	100	100	100	100	110				

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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