



Maximising environmental crops

Enviro crop options

With up to 15% of land potentially heading for environmental crops in the future, *CPM* visited a Hutchinsons trials site to gather best practice advice for growing different options.

By Mike Abram

Growing crops for environmental gain and income is not new, but perhaps what is changing is the emphasis on them.

In the past, they have been a nice source of extra income on top of Basic Payment Scheme funds and the main cash enterprises on farm. But with BPS support being reduced and eventually removed, growing these crops and carrying out other "public good" on farm will become the only government reward available to farmers.

A key year is likely to be 2024. By then 50% of BPS will have gone and the current Countryside Stewardship scheme will be

closed to new entrants. That coincides with the full launch of the Sustainable Farming Incentive as part of the Environmental Land Management scheme.

Within SFI a number of standards will be available for farmers to apply for, with different levels of payment within each depending on the level of land management action taken.

So far, from the information released for the SFI pilot scheme, which is being used to test how the new scheme works in practice, the arable soils standard and the arable land standard are likely to be of most interest for arable growers, although the hedgerow, water body buffering and farm woodland standards could also be relevant depending on farm features.

Other standards will be added as the pilot and scheme develops, Defra says.

While the arable soils standard has been chosen to be included in an early roll out for wider farmer involvement from next year, it is the arable land standard which crosses over more with activities familiar in Countryside Stewardship.

Within Mid-Tier Countryside Stewardship

“ You have to select the most appropriate options for your situation and manage them well to get the most from them. ”

a minimum of 1% of flowering habitat in spring and summer is required to act as nectar and pollen sources for insect pollinators and insect-rich foraging for birds, while 2% of land for winter food for seed-eating birds.

Under the introductory level of the arable land standard in the SFI pilot that's been upped to at least 5% of eligible land, split between 1% of land for nesting and cover, 2% for habitats rich in insects and flowers and 2% for sown winter seed.

In the intermediate level that requirement increases to 8%, including 0.5% that also supports a range of farm wildlife, and to 10% in the advanced level. Additional actions including creating buffers around an increasing proportion of in-field trees, nutrient management and maintenance of other environmental areas on farm are also required as part of the standard.

One major difference in the payment calculation is while in Countryside Stewardship payment was for the area directly in the scheme, in SFI payment it is for the eligible land across the farm. So if 10ha of a 100ha farm were in these schemes, the payment rate is calculated for the 100ha.

So what are the main options for arable farmers to fulfil this criteria, and how should they be grown? That's what a Hutchinsons Environmental trials site set out to explain, says Matt England, the firm's environmental services specialist.

The site, hosted on his family's 180ha farm in Warboys, Cambridgeshire, showcased different mixes that are suitable for existing CS scheme options and will likely



A flower-rich AB8 mix costing around £130/ha ticks the boxes for CS, but only contains around 4% true perennial wildflowers. Payments in CS are £540/ha. It has lots of clover, and a few other legumes such as vetch and sainfoin, which are great, but don't tend to last much more than four or five years.



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Providing winter food for seed-eating birds in Countryside Stewardship is through three options – basic or enhanced overwintered stubbles or AB9, the winter bird food option. Quinoa is a good option for providing winter bird food.

► be options for meeting the proposed SFI arable land standard.

"If you're going to be putting a percentage of your farm down to any kind of stewardship mixes either now or in the future, then you have to select the most appropriate options for your situation and manage them well to get the most from them," suggests Matt.

insect and flower-rich options

Under CS there are five possible options for providing nectar and pollen sources for insect pollinators and insect-rich foraging for birds: nectar flower mix (AB1), flower-rich margins and plots (AB8), cultivated areas for arable plants (AB11), two-year sown legume fallow (AB15) and autumn-sown bumblebird mix (AB16).

The best option for insect habitat is the longer-term grass and flower mix (AB8), according to Matt. "Typically you're taking land out of production for a long time, so you want to get a longer lasting mix in place. You can use nectar mixes (AB1), but they tend to burn out. They can be rotated around the farm, which is a good option, but AB8 provides longer lasting diverse habitat."

A cheaper flower-rich AB8 mix costing around £130/ha ticks the boxes for CS, Matt says, but only contains around 4% true perennial wildflowers. Payments in CS are £628/ha. "It has lots of clover, and a few other legumes such as vetch and sainfoin, which are great but don't tend to last much more than four or five years.

"If you're willing to spend an extra £100/ha an alternative mix has a more diverse range and 14% true perennial wildflowers, which will likely last a lot longer and support more crop-pest predators. If anything, it should improve with age as the nutrients start to leave the soil.

"If you're only going to have it in for five years, go for the cheaper mix, but often these areas are going into the poorest parts

of the farm, which you're looking to take out of production long term, so if you have a mix that will last longer you won't have to re-establish it."

Look at your cost of production for the areas where it is costing you money to grow crops on when siting AB8 areas, he advises. "Typically, it's used around the side of a field, or field corners rather than a whole field option. It doesn't tend to do well in wetter, colder areas of the farm, so north side of woods, for example, are better off just being grass mixtures. But it does do well on nutrient-poor ground."

Establishment of environmental crops, perhaps understandably, is often a lower priority on farm, but to maximise their potential they need to be treated as you would a cash crop. "They're more sensitive than a cereal crop. You know with wheat you can drill it in most conditions, and it will do alright. Think of it more like oilseed rape — it's a similar sized seed with similar problems with lack of moisture," Matt says.

Before drilling, use a stale seedbed to make sure the area is as free from weeds as possible, especially perennial weeds, such as creeping thistle and docks for which the only course of action once the flower mix is established is to spot treat.

Be careful if you're coming out of an old scheme, particularly if it had become overrun with weeds — in such circumstances it might need following to allow perennials to be dealt with effectively, Matt says.

There's a long potential drilling window for AB8 from April through to the end of September. "Drill when conditions are right preferably into moisture or ahead of an almost guaranteed rainy day. Create a fine, firm seedbed and don't move the soil to create another flush of weeds when drilling or broadcasting."

Annual weeds are less of a problem and can be controlled by cutting. "With AB8 you're allowed to cut as many times as you like in the first year. To control some of the annual weeds you want to cut it three or four times — you're almost keeping it like a lawn in that first year."

After the first year, you can't cut it under CS rules until 15 August. Flailing then, however, can leave a thick matt of grass which encourages weeds such as blackgrass or bristly oxtongue that thrive on nutrient-richer soils, Matt says.

"If you can't cut it and remove it, I'd wait until a January or February frost when you should be able to smash that material to pieces and there won't be such a high amount of biomass anyway."

Grazing between 15 August and 15 March



Two-year mixes currently must include kale, which is becoming increasingly hard to grow because of flea beetle. Including fennel (pictured), sweet clover and chicory in the mix might help fill the gaps, if the kale is there but struggling.

is also an option to help remove some of the biomass, he adds, although you would probably need to design a mix specifically to provide nutritional value.

For a whole field rotational option, the two-year sown legume fallow AB15 has been attracting interest from growers looking for alternative break crop options, Matt says. "It's really good for increasing organic matter and structuring your soil, providing you manage it correctly."

Winter bird food

Grown with or without the inclusion of smothering grasses, such as ryegrass, it can potentially help against blackgrass, although that's probably not the sole reason to be using it, Matt says.

"If you grow it with ryegrass, that will stop the blackgrass germinating, but the blackgrass can be sitting dormant for a couple of years before it rears its head again. Be careful how you manage it afterwards.

"With all that thick thatch of grass roots, and the nitrogen being used to break them down, autumn sown cereal crops don't tend to perform very well, so arguably a bean crop could be a better option.

"On particularly blackgrass heavy sites, following with a spring crop may be the only way to ensure you truly clean the field up. Remove all the top, perhaps by baling or grazing after the AB15 period ends, keep spraying off any flushes of weeds going into spring and drill the spring crop into it."

The option without ryegrass is both cheaper at £100/ha seed cost versus £160/ha and easier to manage afterwards, as a wheat crop could be direct drilled after with a disc drill. It might not suppress blackgrass quite as effectively, but

How Countryside Stewardship payment rates and SFI arable land standard compares

Countryside stewardship option	Countryside stewardship payment rates (new rates from Jan 2022)	SFI arable land standard level	SFI payment rate*
AB8 Flower rich margins and plots	£628/ha	Introductory	£28/ha**
AB9 Winter bird food	£640/ha	Intermediate	£54/ha**
AB15 Two year sown legume fallow	£569/ha	Advanced	£74/ha**

*Paid for all eligible land across the farm
**Plus £10 for every tree with a 10m buffer



Phacelia – a popular weed-suppressing, nectar-providing option.

potentially could allow more blackgrass to germinate to be sprayed off, he says.

Establishment of AB15 is like AB8 in that it needs a clean, fine, firm seedbed, but there's a shorter window as it usually follows a cash crop in the rotation. "It has to be in by 15 September. Timely and accurate cutting once established is important, especially if you're trying to control blackgrass."

Providing winter food for seed-eating birds in Countryside Stewardship is through three options — basic or enhanced overwintered stubbles or AB9, the winter bird food option. Again, those options along with using unharvested low input cereals are likely to be the techniques used for SFI.

At the Hutchinsons trial one and two-year AB9 options were sown, alongside rows of individual species across which different herbicide treatments were made to inform weed control options for specific mixes.

Two-year mixes currently must include kale, which is becoming increasingly hard to grow because of flea beetle, Matt says. "If the kale doesn't survive, you shouldn't claim it as a two-year mix.

"Including fennel, sweet clover and chicory in the mix might help fill the gaps, if the kale is there but struggling. Either way you do get a weedy mess in year two, so you would always want to follow a two-year mix with an annual mix that you can spray."

Site these strips on your best worst land, and use the same principles for drilling as other options — target a clean, firm, fine seedbed. Establishment is up to 15 June. In this mix you can use 100 kgN/ha in the seedbed or as it emerges, and it does better following a crop so there is some residual fertiliser, Matt says.

"With the new schemes there is also the possibility of autumn sown winter bird food mixes with winter wheat and kale."

A budget mix containing the minimum six seed producing crops — typically three different cereals, plus cheap options such as fodder radish, mustard and

linseed costs around £60/ha.

Shooting mixes that provide winter cover usually include sorghum or reed millet, albeit in a small proportion. "Compared with a

maize crop, these will tend to still be standing in March. Farms with a big area of maize should be exploring whether a chunk of that should be in something else," he suggests. ■



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