

# ARABLE

A switch to minimal cultivations has resulted in some unexpected environmental benefits on a Staffordshire mixed farm. **Chloe Palmer** finds out more.

## Farmland birds benefit from mixed farm's min-till approach

**A** drive to reduce costs led Ray Bower to try minimal cultivation and direct drilling, but since trialling this approach almost 20 years ago he has observed many more benefits.

Mr Bower is not evangelical about direct drilling, but he is convinced it has worked to good advantage at Lower Drayton Farm, Staffordshire. Most surprisingly, it has led to a many-fold increase in the number of skylarks on the farm.

"The use of minimum tillage helps the farmland birds as soon as we have taken the combine out of the field. There are more weeds and seeds in the stubble and because we do not plough there is a food source for the birds right through the autumn and winter hungry gap," says Mr Bower.

"We purchased a rake and this has been a fantastic piece of kit because it pulls up the weeds, exposes the seeds and insects for the skylarks and knocks the slugs about. I am not able to say if this has reduced our slug numbers but we are definitely using less slug pellets today."

Mr Bower believes his soils drain better since he has adopted minimum tillage and in turn this extends the season when he can travel across the fields.

"We use anaerobic digestate as our fertiliser here and the improved soil structure means we can get on and apply this either by an umbilical

Colin Bower in direct drilled wheat.



system or with a tanker earlier in the year. We have seen no reduction in yields since moving to minimum tillage but we can drill a large acreage very quickly and it saves considerably on labour and fuel costs.

"Before we drill we will usually run the Claydon rake over the field which loosens the existing weeds

and encourages any seed to chit. We come back two weeks later and do the same again and we can spray-off with glyphosate if we need to," he says.

Mr Bower adopts a simple rotation across most of the farm, consisting of winter wheat and oilseed rape.

"We have several fields where we have grown winter wheat continuously for 14 years and have now passed the take-all period so we can use a cheaper, basic seed dressing. Yields are slightly reduced but it means we have straw from the crop every year," he adds.

### Cost-effective

Mr Bower grew winter barley but has found it is more cost-effective for him to grow wheat and buy-in barley if needed to feed the 200-head of cattle on the farm.

The grassland on-farm is permanent flood meadow either side of the River Penk, so is not part of the rotation. It is grazed by the herd of 50 plus suckler cows, with the remainder of the cattle being kept inside

### Farm facts

■ Lower Drayton Farm is a mixed beef and arable unit lying to the north of Penkridge in Staffordshire, adjacent to the M6 motorway and with land lying either side of the River Penk

■ The farm extends to 264 hectares (650 acres), of which 186ha (460 acres) is owned and the remainder rented. Most of the farm (242ha/600 acres) is arable, comprising a rotation of winter wheat and oilseed rape with an area ranging from 8ha (20 acres) to 20ha (50 acres) rented out to a local farmer to grow strawberries and potatoes

■ Ray Bower farms in partnership with his son Richard, who is the chairman of the NFU's Young Generation Forum

■ Five-year average yields are 7.5 tonnes/ha (3.5t/acre) for the continuous winter wheat, 10t/ha (4t/acre) for first wheat and 4t/ha (1.6t/acre) for oilseed rape

Digestate plus farmyard manure supply virtually all nutrient requirements for cropping.



and fed a mixture of round bale silage made from the arable margins, home-grown wheat and bought-in protein.

Mr Bower rents out about 20 hectares (50 acres) of land for strawberry and potato growing. The strawberries are grown under plastic and can be grown on the same





**A Claydon rake is used for weed control and may also be assisting with slug control.**

land for up to three years before they have to be moved to a new site.

"We receive a good rent for the strawberries and the potatoes but it does affect soil structure. The land is levelled before it is returned to us but it does take a couple of years before it is back in the state we want it in," Mr Bower explains.

Mr Bower has a diverse range of secondary enterprises on the farm which bring about 20,000 visitors to the farm each year.

"We have a model aircraft flying group flying their planes on one field, a motorbike track in another and we have two separate care farm sites on the farm. We also run an open farm attraction for the general public where we hold a whole series of events such as lambing live, Halloween events, a Santa's grotto and a new wool event in the spring.

"We host about 20 educational visits for schools each year and this works well because the children then tell their parents and grandparents to bring them back to the farm another time," Mr Bower explains.

The outdoor farm attractions are largely seasonal but Mr Bower has planning permission for a large indoor play barn and a restaurant which will mean the farm can stay open for visitors all-year-round.

"Even though we are doing so many different things, they are all

complementary. The farm is at the centre of everything we do so we cannot move our focus from the core business," Mr Bower adds.

## Environmental theme

A strong environmental theme also runs through the farm business as Mr Bower was one of the first farmers to sign up to the pilot Arable Stewardship Scheme in Staffordshire in the late 1990s. He has been in Higher Level Stewardship ever since and options including wild bird seed mix, nectar mix, grass margins and over-wintered stubbles are dotted across the farm landscape.

"I find the stewardship ties everything together. It helps me meet my Nitrate Vulnerable Zone requirements and it provides excellent habitat for all the wildlife we have here. For me, the farm is my back garden and I still spend a lot of time on a tractor so I like to see all the different bird species.

"Last year, 1,394 birds were ringed on this farm and species included field fares, long tailed tits, pied wagtail, woodcock, golden plover, a pair of barn owls and grey partridge, as well as the hundreds of skylarks," Mr Bower explains.

Mr Bower's next big plan is to finalise the construction of an anaerobic digester (AD) on-farm. He already has a large storage



**Skylark numbers appear to have increased on the farm since a min-till approach was adopted.**

lagoon which stores the digestate delivered from an AD plant many miles away, so once the plant is up and running at Lower Drayton the lagoon can be used for the home-produced digestate.

"Spreading digestate and the farmyard manure from our housed cattle on the arable land means these two sources supply virtually all the nutrients needed for the cropping. It helps to maintain organic matter content in the soil

which improves soil structure," Mr Bower says.

With his fingers in so many proverbial pies, it seems the threat of Brexit is not causing undue concern for Mr Bower. He adopts a philosophical approach to the changes ahead.

"I will continue to do what is best for this farm after Brexit. I hope there will be opportunities for us and I think there will still be grants and payments which may help to fund some of the plans I have for the future."

## Skylarks and Lower Drayton Farm

THE Brewood Ringers has been ringing skylarks and other species at Lower Drayton Farm since it first contacted Ray Bower who told the group about the many skylarks he was observing on the no-till fields.

The numbers of skylarks ringed in the UK each year using traditional methods is just 400 of the total birds ringed which exceeds one million. The use of thermal imaging technology has revolutionised the approach to ringing the more elusive bird species such as the skylark, according to

Colin McShane, of bird group the Brewood Ringers.

"More traditional methods for capture and ringing such as lamping and mist nets are not appropriate for skylarks because they are very small and do not use habitat such as hedges and trees as many birds do.

"The advent of the thermal imaging camera has enabled us to detect the presence of skylarks after dark and then we can catch the birds. We have caught and fitted rings to 200 skylarks now at Lower Drayton Farm and we

think these very high numbers are linked to the adoption of minimal tillage on the arable land.

"We think because the soil profile is not disturbed, there is a greater food source for the birds in autumn and winter. Numbers are far higher than on neighbouring farms where ploughing still takes place."

The Brewood Ringers is now looking for other groups to use thermal imaging cameras to record skylarks on farmland so it can place the results it is collecting in context

with data from other farms in the region.

"We are looking for volunteers to help us with a potential research project which will allow us to research whether our anecdotal evidence regarding the preference of the skylarks for no-till fields is significant," Mr McShane says.

### MORE INFORMATION

Anyone who is interested in becoming involved in the project should contact the Brewood Ringers through its website, [www.brewoodringers.com](http://www.brewoodringers.com)