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How to cut fertiliser costs without losing out on yields

Fitting a headland mechanism to the spreader and turning it at the right point can deliver big savings on fertiliser costs

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Machinery manufacturers make a lot of the accuracy and savings to be achieved when using a GPS-controlled fertiliser spreader. And it is true to say that using such technology can help to deliver fertiliser efficiencies.

One of the biggest savings results from switching the spreader on and off at the correct time when turning at the headland.

Headland control and getting the

ins and outs right is particularly important for grassland farmers. They will have a much higher proportion of the field covered in the headland run as fields tend to be smaller, on average, compared to those on most tillage farms.

Savings associated with headland operations can yield substantial benefits on grassland farms.

If using a GPS spreader for the first time, many operators are surprised by the distance from the headland that they have to travel before being alerted to open the shutter. In fact many drivers will stop the tractor, thinking that the GPS control is not working before they get to this point.

Desirable saving

Machinery companies estimate the saving in fertiliser use from this control alone is around 10%. A very desirable saving. This is something that most farmers with a basic

spreader (i.e. no GPS) can do for themselves.

By training yourself to turn the spreader on at the right point, it is possible to achieve similar savings in fertiliser without the cost of these more elaborate machines.

The issue arises because when driving away from the headland most operators don't take account of the distance that the fertiliser is being thrown back. The spreader on point when driving away from the headland is typically one bout width from the headland run.

So, if you are spreading at 15m bout widths then you need to be 15m from the wheel marks on the headland run. That is 22.5m (15m+7.5) from the headland itself. When coming towards the headland at the opposite end you need to leave the spreader on until you have crossed the wheel markings.

Use a few temporary fencing posts

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and stick them in the ground to mark this on point and train yourself to be able to estimate it. Over time, you will get used to judging the distance by eye.

Headland control

When spreading fertiliser, it is very important that we put the fertiliser out accurately and don't waste any. One of the challenges comes when doing the headland run on the field. Most fertiliser spreaders work on the overlap principle with a triangular shaped spread pattern. This means that the spread rate drops off the further out we get from the disc.

It is only when we make the next run in the field, which overlaps the previous run, that we get an even distribution of fertiliser. This means that fertiliser is being thrown much wider than the working width set for each bout.

The challenge is on the headland run. We can end up throwing fertiliser into the hedge and wasting it in the process unless we make some changes.

Fitting a headland mechanism to the spreader will eliminate this problem. There are different methods used by different manufacturers but the most common is a deflector system.

This unit is only used during the headland run. It gets lowered into the spread pattern on the hedge side of the machine and will deflect the fertiliser away from the hedge and back into the field.

This eliminates the waste and ensures the fertiliser only lands in the field. These can be retrofitted to most modern spreaders, and are a feature you should look for when buying a new spreader.

Spreader vanes

Spreader vanes are the most important part of the fertiliser spreader and often the most neglected. This 300mm piece of steel is what does all the work throwing the fertiliser out to where it needs to go.

These are wearing parts and need to be checked regularly and replaced when they show signs of wear.

Over time as the prills hit the metal the steel will become rippled and if left long enough will wear right through. A worn vane will not give an accurate spread pattern as the fertiliser will not run smoothly and gain the energy it needs to travel.

A typical set of spreader vanes for a farmer machine will cost in the region of €300 to replace.



John and Brendan Walsh.

Case study: 'The GPS has been a great help in improving accuracy'

John and Brendan Walsh could see the writing on a wall a few years back in terms of the requirement to reduce reliance on chemical N. To respond to this they have made many changes on the farm including incorporating clover into their grassland swards, better use of slurry and improving soil fertility.

"We also invested in some basic GPS equipment," says John.

"In the past, we could put out a bit extra but now with the cost of fertiliser and the need to reduce reliance on it and protect the environment, it's even more important to get the spreading as precise as possible."

The Walshs did their homework, spoke to the contractor and soon realised the contractor's equipment was too high spec and expensive for what they needed. Brendan then looked at the options available to him online.

"We wanted something cheap and cheerful that would do the basics," says Brendan. "We invested in Black



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Box equipment, costing approximately €1,100. It was relatively easy to set up."

One of the main observations when they started using the GPS was the level of overlap they had when spreading. When coming to the end of a run, due to paddock shape there can often be an overlap at the end of a paddock. The GPS helps to highlight where the overlap begins and so the spreader can be shut off.

"The GPS equipment has allowed us to cut this back," says Brendan.

"Using the equipment has improved the accuracy with which we are spreading but also the accuracy

of the amount we are spreading. We are using it for the chemical fertiliser and the slurry spreading.

"In the past, using a splash plate it was easy to see where you had spread, that's not so easy with the dribble bar," adds John.

"The GPS has been a great help. We have realised that we were slightly over-applying slurry at times due to travelling in too low a gear. It's a lot easier now to stick to the buffer zones along waterways. This is really important from a water quality perspective."