How to squeeze NVZ costs

A masterclass in how to use slurry effectively and responsibly to improve yields

By Sam Walton

Above: The reception tank for JSR Farms' new Bauer 855 separator.

We're cutting our fertiliser bill by over £60 an acre and getting better yields to boot...

Those pig farmers with arable land will recognise the value of pig slurry, separated or otherwise. Or will they?

We all know it is marvellous fertiliser, but do we really know just how marvellous?

I went to have a look at a new Bauer separator at Freshlands, one of JSR's farms. The new Bauer 855 joins three smaller Bauer 655 models already installed on other pig units. JSR Farms arable director Philip Huxtable rates the use of slurry highly and is clear it brings savings.

With four separators, they are now able to separate all their slurry. Underground pipes transport the separated slurry round many of their farms. On some they are using the same pipes for irrigation.

On the wolds, where there is no irrigation, they have put in underground pipes especially to be able to use the slurry through their home designed and built umbilical cord 24 metre dribble bar. I ask Philip how many acres they were able to reach and he replied, 'Not enough'.

AUTOMATIC

The Bauer separator at Feshlands receives slurry from a reception tank which in turn is filled by pump from two units between half and three-quarters of a mile away.

The automatic system, which has a stainless steel screw and screen, is capable of handling 6,000-12,000 gallons an hour, depending on the liquidity of the neat slurry.

Every so often the machine switches itself into reverse for a few seconds, which cleans the screw. Side plates can be removed in seconds to exposes the screen for checking.

The only maintenance is a couple of shots of grease once a week on the screw bearing, and an occasional washing off of the screen.

25 PERCENT DRY MATTER

The separator takes out the smallest of particles from the slurry. The resulting product is around 25 percent dry matter.

This goes on top of straw manure and is either mixed in or has other manure put on top. It composts easily; fermentation kills any weed seeds. It is spread with conventional manure spreaders in the autumn.

Philip Huxtable would dearly love to have more slurry storage, so he could use all the slurry in the spring, rather than having to put some on stubbles in the autumn. He has put up a good case for such a move.

Analysis of the separated slurry does not seem to suffer. They find they get 2 kilos of N per cubic metre, 2 kilos of phosphate and 2.5 kilos of potash.

On average they apply 60 cubic metres a hectare which is considered a low application, but they err on the side of caution in case heavy rain causes run-off or leaching into drains.

RESPONSIBLY

This is an example of how pig producers are working to apply nutrients responsibly (and are, as National Pig Association says, capable of achieving Defra's aims without heavy-handed regulation).

Testing with Quantofix tells

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them total N in the slurry as spread and the ADAS Manner programme tells them the total that will be available to the growing crop, which is around 75 percent of the applied amount.

They know from the RB209 guide that they benefit from 50 percent of the phosphate and 90 percent of the potash.

Philip Huxtable worked out a couple of years ago, before fertiliser prices shot up, that by using slurry they were saving £37.82p an acre on N, £33.22p on P and £35.32 on K. On top of that they have the benefit of 42 kilos of sulphur a hectare and 24 kilos of magnesium, which together mean a further saving of £12 a hectare.

On a five-year average, slurry treated crops have yielded over half a tonne a hectare more

FERTILISER PRICE

If you took the increase in fertiliser price since then and did the figures again, we reckoned it would show a saving of £150 a hectare – nearly £61 an acre. And if anyone cared to apply more than 60 cubic metres a hectare, the savings would be even greater.

Top dressing begins on rape in February, or as soon as travelling conditions allow. Applications are made to wheat up to first node or growth stage 31. He would not want to go beyond second node or stage 32.

Back at the installation, there is a submersible pump and a mixer in the reception tank. The large silo that holds the separated slurry holds around 15 percent more than before separation.

TRACTOR-DRIVEN MIXER

There are no stirrers now, other than a tractor-driven mixer the day before spreading.

There is less smell and separated slurry goes through the curtained dribble bar easily, whereas unseparated slurry would clog the outlets. Because the slurry is separated there is no contamination of the crop leaf.

NITROGEN SENSOR

Something which Philip Huxtable has used for the last three years is a nitrogen sensor fitted to the sprayer cab roof. This device from Yara measures reflection from four different angles of the crop and is able to determine the nitrogen content and automatically increase or decrease the rate applied.

It can produce maps also. It shows, as an example, where the slurry applicator didn't get into the corners and so on. The wonders of modern technology!

On a five year average, the difference between slurry treated crops and those from farms where no slurry is available is 0.6 tonnes a hectare. This alone would surely justify using slurry.

Philip Huxtable is so convinced about the benefits, the company is now prepared to tanker slurry to a silo it has had erected on an off-lying farm. The difference in the crops is clearly visible.

I hope pig-keepers will use these figures to show arable farmers what they are missing if they don't grab every opportunity to use pig slurry.

I know one thing… since I stopped keeping pigs my own farm has suffered. I've told Philip that as my farm adjoins one of JSR's, he can bring as much slurry as he likes.