

Cost effective slurry spreading

at Langford Farm,
Northwich, Cheshire

Splash plate, dribble bar, injector or trailing shoe - which method is most financially viable to the typical beef and sheep farmer? That was the question posed by Cheshire's beef and sheep monitor farmer and this was the result seen on his farm...

“You hear a lot about using dribble bars and injectors to apply slurry, but is it worthwhile financially? That's what I wanted to find out and was the main reason for doing the trial.”

This is how John Gate, Cheshire's Beef and Sheep Monitor Farmer, summed up the objective of the demonstration trial conducted at his lowland farm near Lostock Green in Cheshire. So, how did it pan-out?

Four treatments and some interesting results

“The method of slurry application has a huge impact on how much of its nutrient value you actually deliver to the land – and it will directly affect how much money you save on bought-in bagged fertiliser,” said Fred Percival of Cheshire-based slurry consultants and equipment manufacturers, Spreadwise, who applied the treatments on one of John's fields.

Four application treatments were applied on 9th May 2011. 34,000 litres/ha (3,000 gallons/acre) of beef cattle slurry from the farm were applied to grassland by:

1. **Splash plate**
2. **Dribble bar**
3. **Injection at 12cm depth**
4. **Trailing shoe**

The field was grazed by sheep in early spring before being closed for a late cut



of silage. The whole field was dressed, in addition to the slurry applications, on 23rd May with 40 kg N/ha (33 units/acre) of bagged nitrogen.

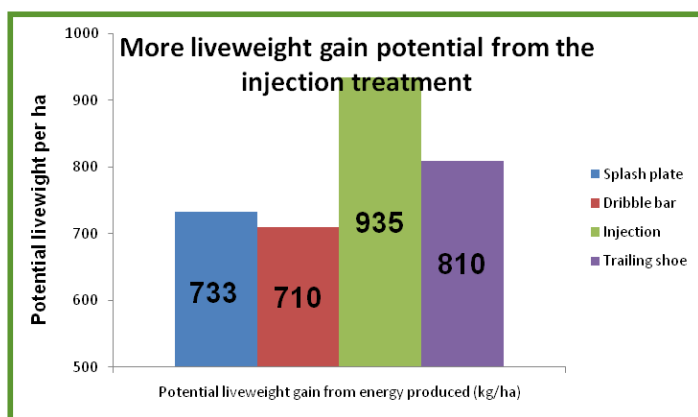
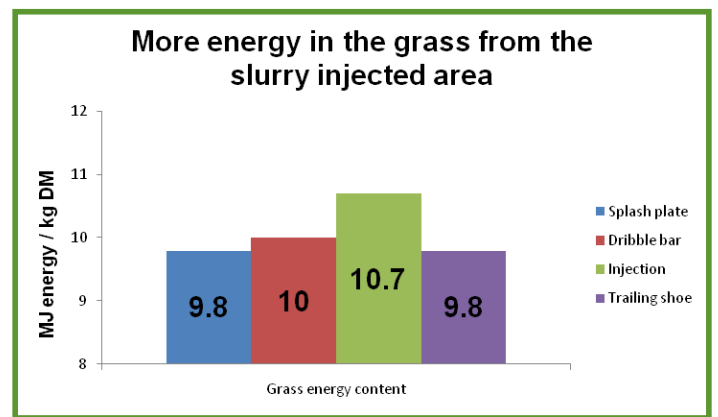
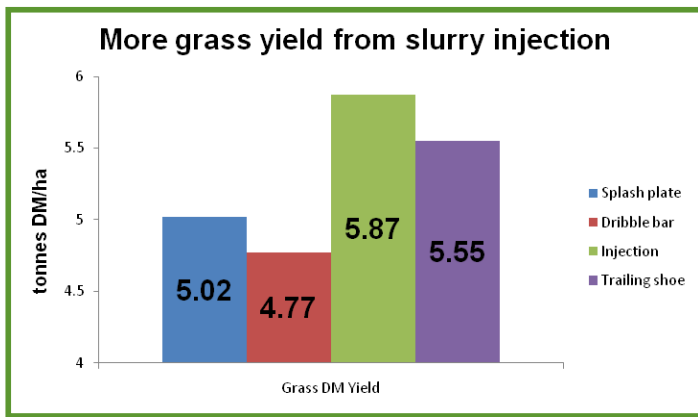
Slurry Injection

“Using typical values, the nitrogen John got from his normal splash plate application was worth £22/ha,” according to Dr George Fisher from Reaseheath Agricultural Development Academy, who implement the Livestock Northwest Programme in Cheshire. “Because the other application methods reduce nitrogen loss, this increased to £27/ha for the dribble bar and trailing shoe applications and went to £31/ha for the injector; so John could save £9/ha on his bought-in

fertiliser at £350/tonne for nitrogen. “So if it costs John about £17/ha to inject the slurry using a contractor, compared to him using his own splash plate and tanker, the extra N doesn't cover the cost of application.”

Real financial gain comes from turning grass energy into liveweight

But there were big financial advantages to be taken, which only became apparent from sampling and measuring the grass from each treatment. “There wasn't much difference between the splash plate, dribble bar and trailing shoe methods, but there was more grass, with higher energy content, from the area treated with the



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slurry injector.” This can be seen from the three graphs above, which also show how much liveweight gain could be achieved from the grass energy produced from each plot.

Grass from each slurry treatment area was sampled by cutting on 28th June (silage cutting stage). An assessment of yield was made and samples were sent off for laboratory analysis:

- Grass DM yield was increased by approximately 10% in the trailing shoe area and 17% after injection, compared to either splash plate or dribble bar.

- ▶ This shows that nitrogen recovery from slurry is better the more contact there is between the slurry and the soil, which reduces N losses from ammonia volatilisation.

- Grass D value and ME content was around 7% higher following slurry injection compared with the other three methods.

- ▶ This indicates that contamination of herbage is less following injection into the soil rather than application on the sward.

- The calculated energy production per ha shows that the extra energy from the slurry injected area could produce 100 –

200 kg/ha more liveweight gain than the other treatments.

- ▶ This assumes that the grass utilisation rate from cutting to feeding is 70%.

Q: So is it financially worthwhile for John to use a contractor to inject his slurry rather than use his own splash plate and tanker? After all, that was the initial question and reason for doing the trial in the first place...

A: “The answer is yes, but it depends what John does with the extra grass,” says Dr George Fisher, RADA, Reaseheath College. “If John simply takes the extra N from injected slurry off his purchased fertiliser applications, then no, it’s not worth changing from using his own splash plate to paying a contractor to do the injection. However, based on the results of this trial, there are two other ways in which John can make this pay handsomely.

“Firstly, John got enough extra grass energy off the slurry injected area to replace about 750 kg of concentrate for every ha treated, worth around £85/ha. Secondly, if John went down the route of turning the extra grass into extra liveweight gain, then there was 100 to 200 kg LW/ha to be had, worth around £150 to £300/ha in beef on the hook.

“The challenge is that it is difficult to even see the difference in grass growth with your eyes; it’s there, but not obvious. So you have to have skill and confidence to manage grazing or cutting to get the benefit from the extra grass. This is not a problem for John, but you have to know what you are doing with your grassland management to reap the benefits.”

The results imply that in this demonstration trial, the benefits of switching from splash plate to injection for slurry gave benefits by increasing nitrogen availability above and beyond what the standard book values would suggest. Perhaps this was due to the dry season, where injecting slurry reduced wastage of grass by surface application. But the conclusion has to be that if you are a good grassland manager, then the extra cost of application is more than recouped in either reduced concentrate bills or increased production per ha.

- ▶ For more information on the Livestock programme in Cheshire and events that are free to attend, contact Lesley Innes on (01270) 625131 ext. 308, at lesleyi@reaseheath.ac.uk or visit www.livestocknw.co.uk

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