

Practical Use of Manures

A clear solution for farmers



Taw Catchment NVZ Newsletter

Newsletter 1.

May 2007

Welcome to the first in a series of newsletters the aim of which is to further encourage participating farmers in the Taw Catchments Project in continuing to view the slurries and manures produced on their holdings as useful fertiliser rather than a waste to be disposed of.

Within the newsletter you will find information on use of slurries to fertilise second/third cut silage as well as a review of some of the novel slurry spreading machines.

In future we hope to provide a practical review of the NVZ consultation, the date of the release of which has still to be decided, as well as notes on using FYM and slurries for autumn crops and re-seeds.

As yet we have no firm news on the NVZ consultation although we are being encouraged to look to NI and Scotland for an idea of what may be on the cards. There have also been suggestions that the size of the NVZ area may be increased a little!

We hope you find the newsletter useful and would continue to ask that if you have any queries you either visit the project specific web site via the Creedy site

www.creedyassociates.com

Or contact us at the office on 01363 776162

SLURRY FOR 2nd & 3rd CUT GRASS SILAGE

Remember the chat about "target crops" for slurry during the workshops? Basically, any crop where a lot of dry matter, and hence nutrients, is harvested and taken away is a good target crop. 2nd cut grass silage clearly fits the bill.

	SNS			Phosphate index				Potash			
	Low	Mod	High	0	1	2	3	0	1	2	3
KG/ha	120	48	140	90	30	40M	20	80	80	80M (2-) 60M (2+)	30
Units/acre	88	80	80	72	24	32M	16	64	64	64M (2-) 48M (2+)	24

SNS = Soil Nitrogen Supply status., M = Maintenance dressing. See RB 209 for more detailed recommendations.

Using the "How much to apply form" we went through in the afternoon of the workshops, we can work out fertiliser and slurry applications for this silage cut. Assuming SNS = moderate, P Index = 2 and K Index = 2- and using Imperial units, the fertiliser requirements are:

Units/1000gls	N	P	K
Total	27	11	32
Available	5	6	29

	N	P	K
Units/acre	80	32	64

Dairy slurry @6% dry matter (medium soup) will typically contain the TOTAL and AVAILABLE nutrients shown

Since losses of nitrogen as ammonia gas are likely to be high from slurry spread on grass at this time of the year, we can estimate that only 20% of the total nitrogen will be available for uptake by the grass. Phosphate and potash availability is much less affected by weather etc so the standard figures (50% of the total phosphate and 90% of the total potash) can be used. At Soil Indices of 2 or above, there is enough phosphate and potash in the soil to meet crop requirements. The recommendations are for maintenance (M) i.e. to maintain soil fertility. We can, therefore, use the total nutrients in the slurry when working out how much to apply to meet the recommendations. An application of 3000gallons/ac would supply:

	Nitrogen	Phosphorus	Potash
Units/3000 gls	15	33	96

Comparing the figures in Tables 2 and 4, you can see that the slurry application supplies all the phosphate and potash required and some of the nitrogen. Straight nitrogen fertiliser at 65 units/ac is all the purchased fertiliser needed.

If we reckon that fertiliser costs 22, 13 and 11p/unit for nitrogen, phosphate and potash, respectively, the money saved in this example amounts to about £14/ac.

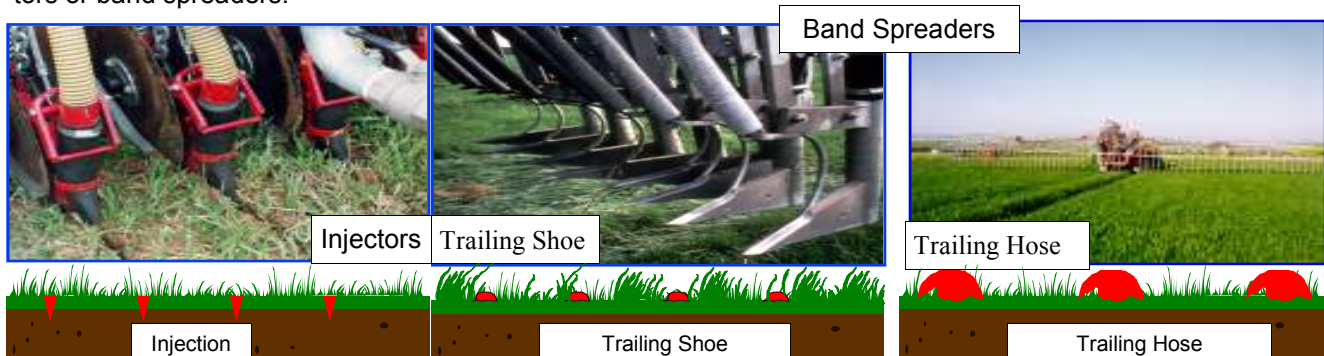
	Nitrogen	Phosphorus	Potash	Total
	£			
Without Slurry	18	4	7	29
With Slurry	14			14

www.defra.gov.uk/farm/environment/water/csf

The England Catchment Sensitive Farming Delivery Initiative (ECSFDI) is delivered in partnership by Natural England, the Environment Agency and Defra

The Low down on injectors and band spreaders

Most of you will use a vacuum tanker or similar to spread slurry on land. As we mentioned during the workshops, there are alternatives that can offer some advantages. These alternatives can generally be categorised as injectors or band spreaders:



Shallow injectors cut slots in the soil, usually just a few centimetres deep, which are filled with slurry. Deep injectors work much deeper at 20 cm plus and are often equipped with wings to aid lateral dispersion beneath the soil. As their name implies, band spreaders apply slurry in narrow, parallel bands across the land surface. Trailing hose machines usually comprise an array of flexible pipes that spread bands over the crop surface. Trailing shoes are designed to apply bands to the soil surface beneath the crop canopy.

Why Bother—Most modern machines were originally developed, mainly in the Netherlands, to reduce emissions of ammonia gas (NH₃) from spreading slurry. Livestock manures are known to be the biggest single source in the atmosphere and this leads to some environmental issues. Following emission from slurry or FYM in a building, store or after spreading, it can be re-deposited in one form or another on to land or lakes etc. This can be damaging to the environment because it 1) contributes to acid rain 2), adds nitrogen to poor soils such as heathland that can change the type of plants that grow there.

Worthwhile? - Although there is no regulation of ammonia emission in the UK, there are guidelines in the Defra Codes and it is worthwhile considering the pros and cons of using an injector or band spreader on your farm. Ammonia emission from slurry represents loss of nitrogen and, hence, loss of fertiliser value. The question is “is the potential saving on purchased nitrogen fertiliser sufficient to make it worthwhile using an injector or band spreader?” Remember, that using the alternative spreader will save only on nitrogen –phosphate and potash will be the same as normal spreading and that any nitrogen saved through reducing ammonia loss in autumn/winter is likely to be lost via nitrate leaching.

If we work out the amount of available nutrients supplied by spreading dairy slurry (6% dry matter or medium soup) at 40m³/ha for 2nd cut grass silage by normal means and by injector, we get the following cost comparison:

	Nitrogen	Phosphate	Potash	Value
	kg/ha			£/ha
Total nutrients	120	48	140	
Available nutrients				
Normal spreading	24	24	126	43.0
Injection	60	24	126	59.2
Potential saving from using injection				16.2

The difference between spreading methods arises because the availability of slurry nitrogen spread by normal means in May is only 20%, because ammonia losses are likely to be high under warm, dry conditions. Availability for injected slurry is about 50% because ammonia losses are much lower.

At what cost ? - Using an injector offers the potential to save an additional £16/ha on nitrogen fertiliser. Whether or not this is worth it depends on how much extra you have to pay for injection of slurry. Owning an injector is a costly option so it is likely to be down to how much your contractor charges.

Wider window for spreading—Using an injector or band spreader also increases the time window for spreading – especially on grassland. It is well known that spreading on grass in spring poses a risk of contamination of herbage that can result in poor silage fermentation or herbage rejection. When properly used, herbage contamination from a shallow injector or trailing shoe machine is negligible. This means that you can safely cut for silage within 2-3 weeks of slurry application so significantly extending the period for slurry spreading. Trailing shoe machine are especially suitable for they work well in long grass. The shallow injectors work best in short grass i.e. in late winter or immediately after cutting or grazing. We would not normally recommend that slurry be used for grass for grazing because it supplies much more potash than needed. It is not such a bad option for injectors and trailing shoes because application rates can be kept much lower and more accurate than is feasible with normal spreaders.