

Low Emission Slurry Spreading (LESS)



Cattle slurry is a valuable source of N, P & K produced on farm. The nitrogen (N) in cattle slurry is in the ammonia form similar to N in urea fertilisers and as such can be easily lost to the atmosphere.

Slurry application techniques such as trailing hose or trailing shoe reduce the surface area of the slurry compared to the splash plate thus reducing the loss of N as ammonia to the air.



Top Tips to Utilising Slurry N Efficiently

1. Apply to fields with a large nutrient demand i.e. Silage Fields
2. Apply under cool & damp conditions
3. Apply with trailing hose or shoe
4. Spring application is best
5. Dilution with water will increase slurry N efficiency
6. Test slurry to determine nutrient content
7. Adjust chemical fertiliser N rate & make cost saving

Figure 1:- Trailing shoe slurry application method reduces ammonia N losses

The trailing hose (dribble bar) reduces the surface area of the slurry by placing it in narrow bands rather than a thin film on the grass. The trailing shoe is more effective at reducing ammonia losses as the slurry is placed in bands but directly onto the soil surface just below the grass. The trailing hose will deliver up to 30% reduction and the trailing shoe 60% reduction in ammonia losses. Table 1 below shows the fertiliser N replacement values (kg/m^3) depending on application technique.

Table 1:- Cattle Slurry available N, P & K depending on method & timing of slurry application

Application Method / Timing	Nitrogen (kg/m^3)		Phosphorus (kg/m^3)	Potassium (kg/m^3)
	Spring (kg/m^3)	Summer (kg/m^3)		
Trailing Shoe	1.0	0.6	0.5	3.5
Trailing Hose	0.8	0.5	0.5	3.5
Splash plate	0.6	0.3	0.5	3.5

Recycling Cattle Slurry & Silage Fields

Cutting silage removes large quantities of K from fields, while slurry contains large volumes of K, so it makes sense to return the slurry to the silage fields to keep a balance in the major nutrients like P & K. Cattle slurry is a valuable source of N as it can supply up to 30% of a 1st cut crop of grass silage N requirements when applied in spring by LESS techniques.

Figure 2 below shows that a spring application by LESS of 33m³/ha (3,000 gals/ac) cattle slurry can supply an additional 23 kg N/ha compared to a summer application with a splash plate. This offers a significant costing saving (€20/ha) in chemical farm fertiliser requirements and a more efficient use of N in cattle slurry while reducing ammonia losses.

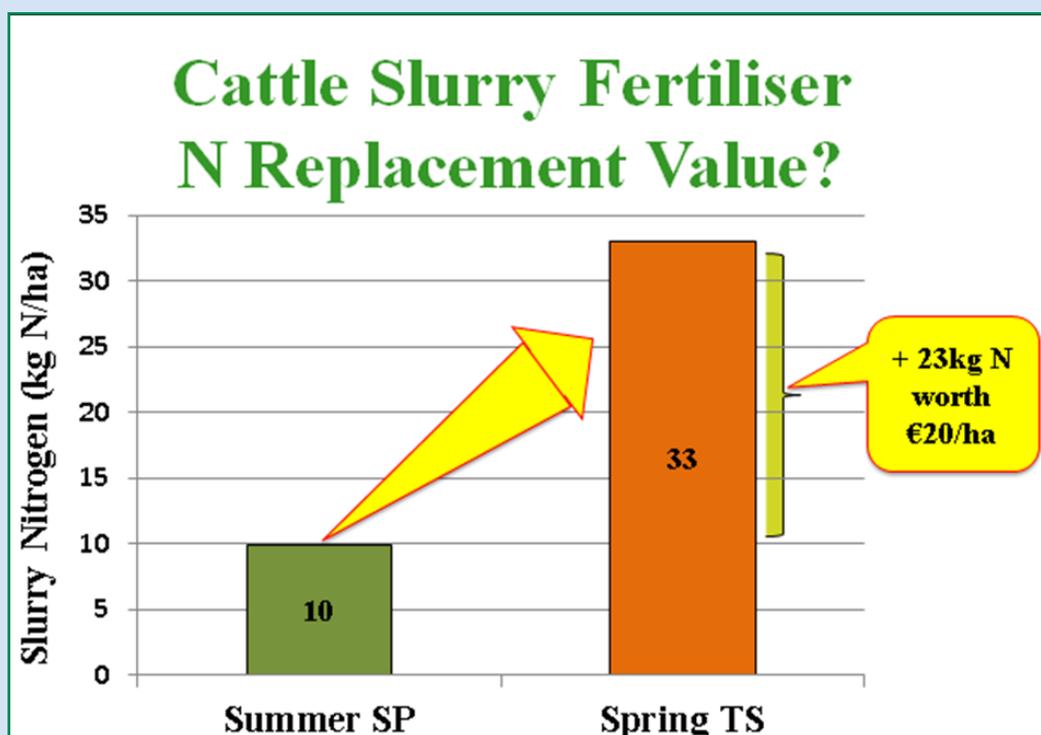


Figure 2:- Cattle slurry applied at 33 m³/ha (3,000 gals/ac) by splash-plate (SP) in summer compared trailing shoe (TS)

Other Benefits of LESS

- Reduces sward contamination from slurry thus decreasing grazing return times compared to the splash plate.
- Widens the window for spring slurry application thus better soil conditions at time of application.
- More precise delivery of nutrients across the spread width compared to the splash plate.
- Better recovery of cut swards after grass silage harvest due to more N retained by grass sward.