

Managing Cattle Slurry Efficiently

*Mark Plunkett,
Teagasc,
Johnstown Castle*



Utilising Major Cattle Slurry Nutrients

N

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P

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K

Organic fertilisers generated on farms can effectively replace a proportion of chemical fertilisers

Fertiliser Replacement Values

Available Nutrient Values

Nutrient	kg/m ³	units/ 1,000gals
N	1.0	9
P	0.5	5
K	3.5	32
DM%	6.3	6.3

Factors to Consider

- ✓ Slurry dilution with water?
- ✓ Slurry DM^{\$} - 10 fold variation
- ✓ Testing slurry nutrient levels



^{\$}DM, dry matter %

Slurry Dilution vs. N-P-K Value

The effect of slurry DM on the N, P & K Values of cattle slurry

DM %	N kg/m ³ (units/1,000 gals)	P kg/m ³ (units/1,000 gals)	K kg/m ³ (units/1,000 gals)
2	0.4 (4)	0.21 (2)	1.4 (13)
4	0.7 (6)	0.35 (3)	2.3 (21)
6	1.0 (9)	0.5 (5)	3.5 (32)
7	1.1 (10)	0.6 (6)	4.0 (36)

Example: Cattle Slurry @ 33m³/ha - First Cut Grass Silage

Nutrients	Crop Req. (kg/ha)	Nutrients applied	
		4% DM Slurry	7% DM Slurry
P	20	12 (-40%)	20
K	125	76 (-50%)	120 (-4%)

Nitrogen (N) in slurry

Organic N

- 50% Organic N
- Not immediately plant available
- Becomes available over time through N mineralization in the soil

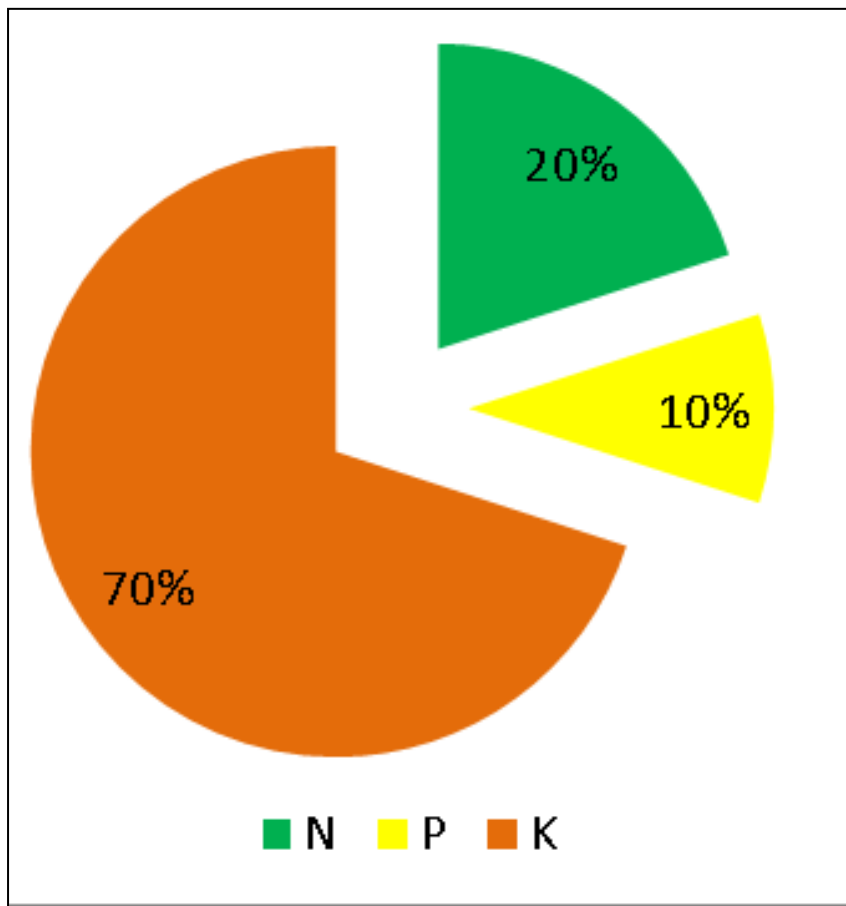
Mineral N

- 50% Ammonium N
- Plant Available N in season of application
- Risk of loss depends on:
 - Timing of application
 - Weather conditions
 - Application Method
- N recovery 15 to 40%

Where should I spread slurry?

Where can I best maximise the value of slurry nutrients?

Nutrient Profile



Crop P & K Needs

- Soil Analysis
- Fertiliser Plan
- Crops
 - Grass Silage
 - Slurry - Balanced Fertiliser
 - Adjust slurry application rate based on slurry DM



Reducing slurry N losses

Best practice for reducing ammonia-N volatilisation loss

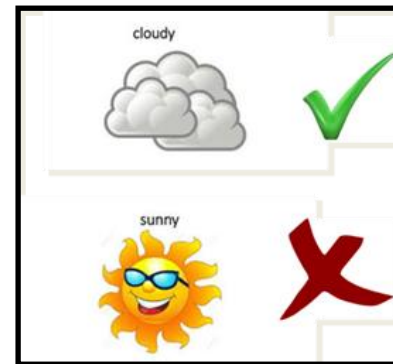
Timing of App.

- Application in Spring
- High crop N demand
- Maximise N recovery
- Aim to have 75% slurry applied by end of April



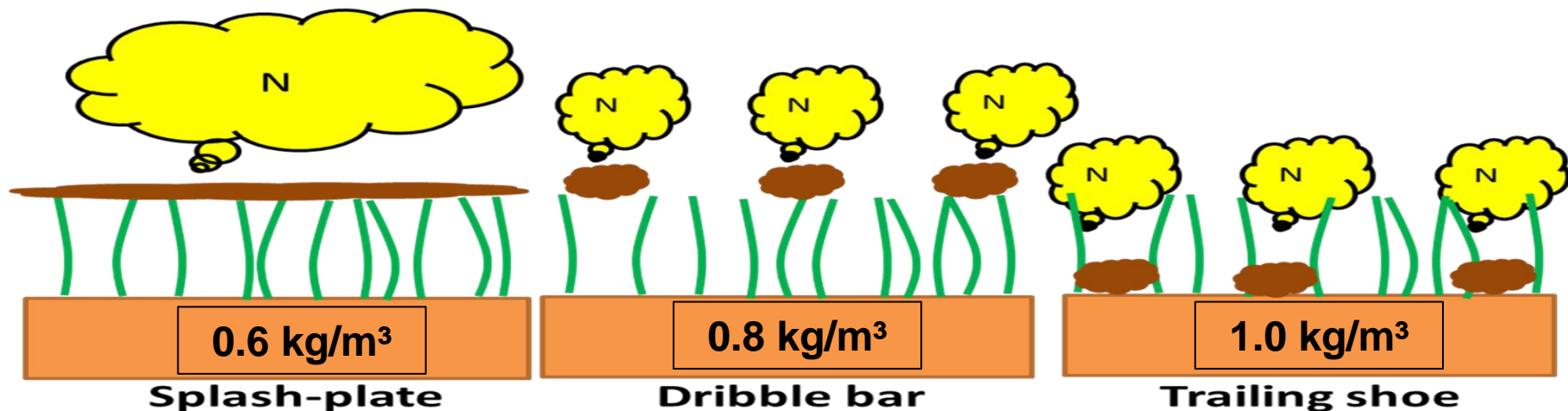
Weather

- Apply slurry during
 - Cool, damp, overcast or even misty conditions
- Avoid slurry application
 - Warm, dry, sunny weather



Reducing slurry N losses

N value with different slurry application methods



Dribbler Bar / Trailing Shoe Benefits

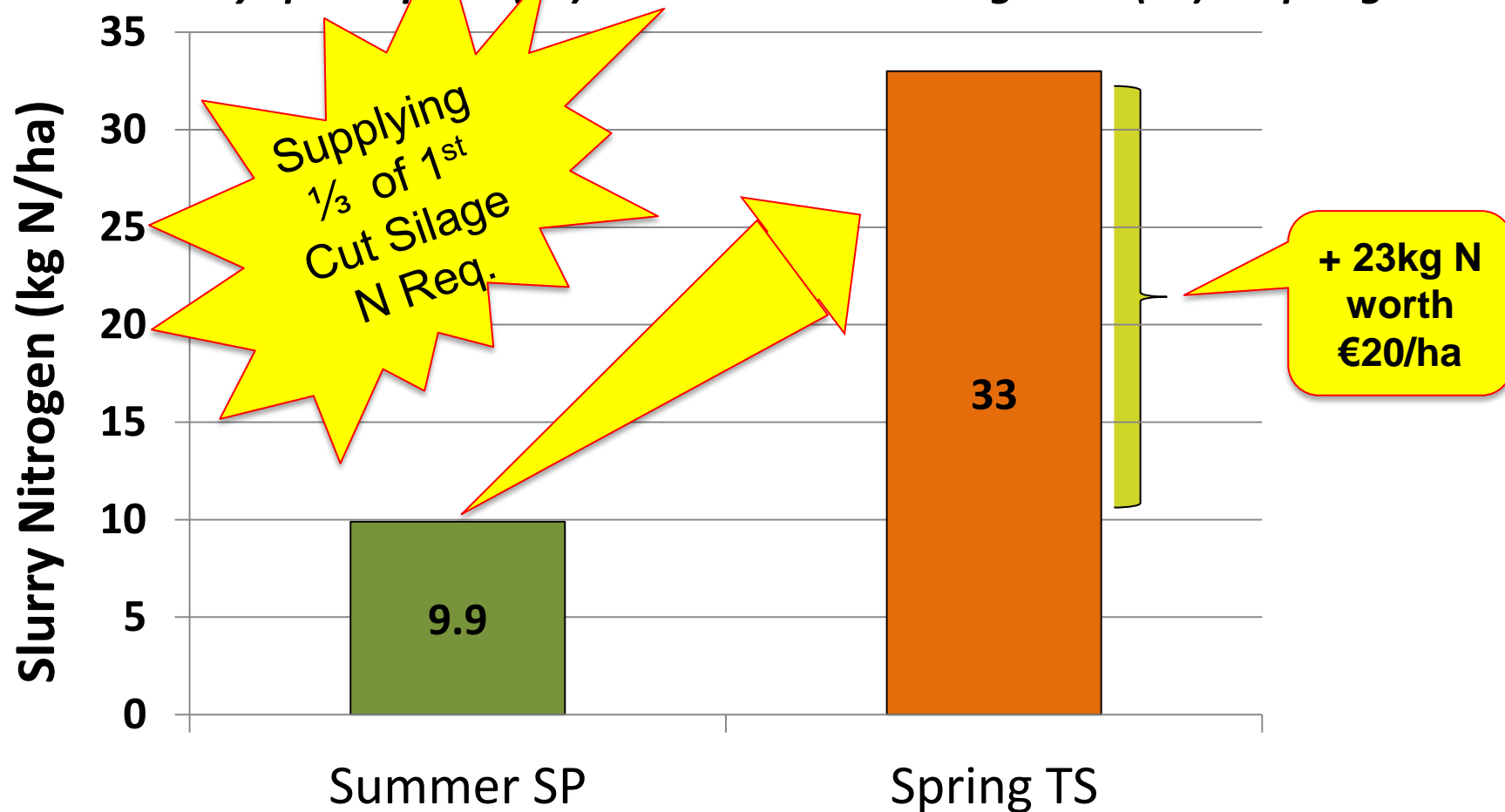
- Less grass contamination / More precise app. of nutrients
- Increased Flexibility -Spread on higher grass covers
- Wider window of application / better soil condition

Fertiliser replacement value?


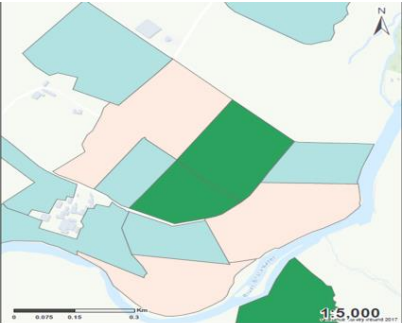









Maximising the value of slurry N

Cattle slurry applied at 33 m³/ha

by splash-plate (SP) in summer vs. trailing shoe (TS) in spring



Planning Slurry Applications

Where ?	When ?	How ?	Rate?
 <ul style="list-style-type: none"> • Crop P & K requirements • Target fields with highest nutrient need 	<ul style="list-style-type: none"> • Spring better than summer • Cool, Damp Conditions <div>   </div> <div>   </div>	<ul style="list-style-type: none"> • Use LESS application method  	<div>  </div> <ul style="list-style-type: none"> • Adjust slurry application rates based on DM% <div>   </div>