

# 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 <sup>3</sup>	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<sup>\$</sup> - 10 fold variation
- ✓ Testing slurry nutrient levels



<sup>\$</sup>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 <sup>3</sup> (units/1,000 gals)	P kg/m <sup>3</sup> (units/1,000 gals)	K kg/m <sup>3</sup> (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 @ 33m<sup>3</sup>/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

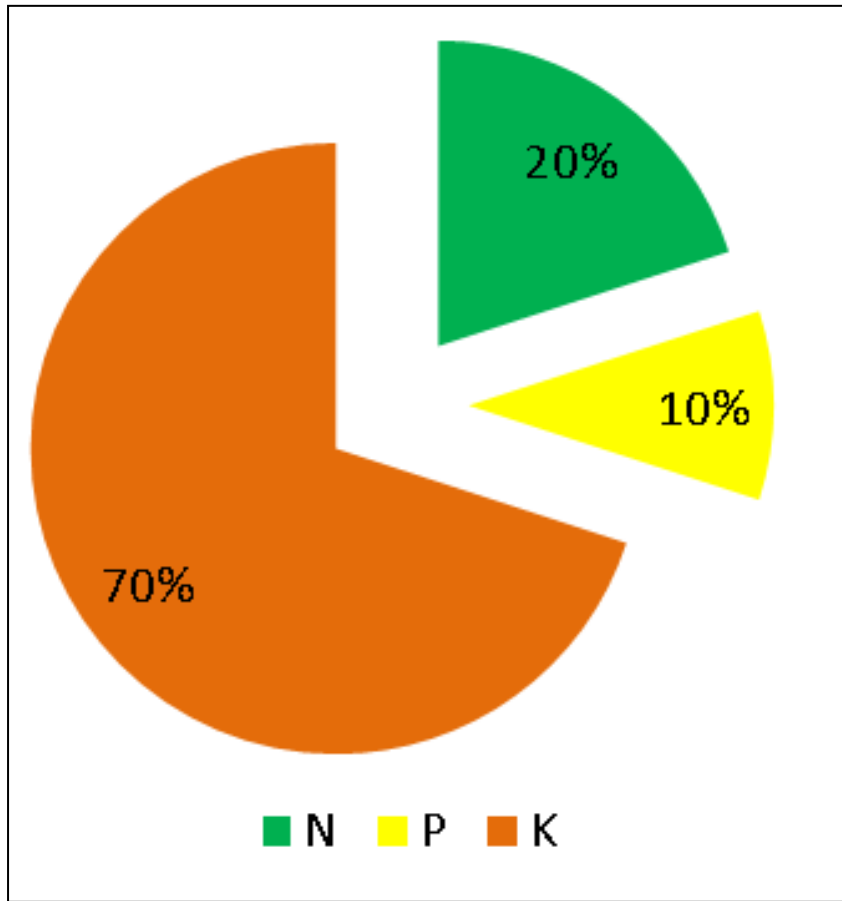
## Mineral N

- 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*

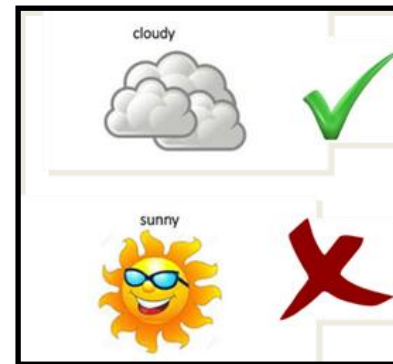
## Timing of App.

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



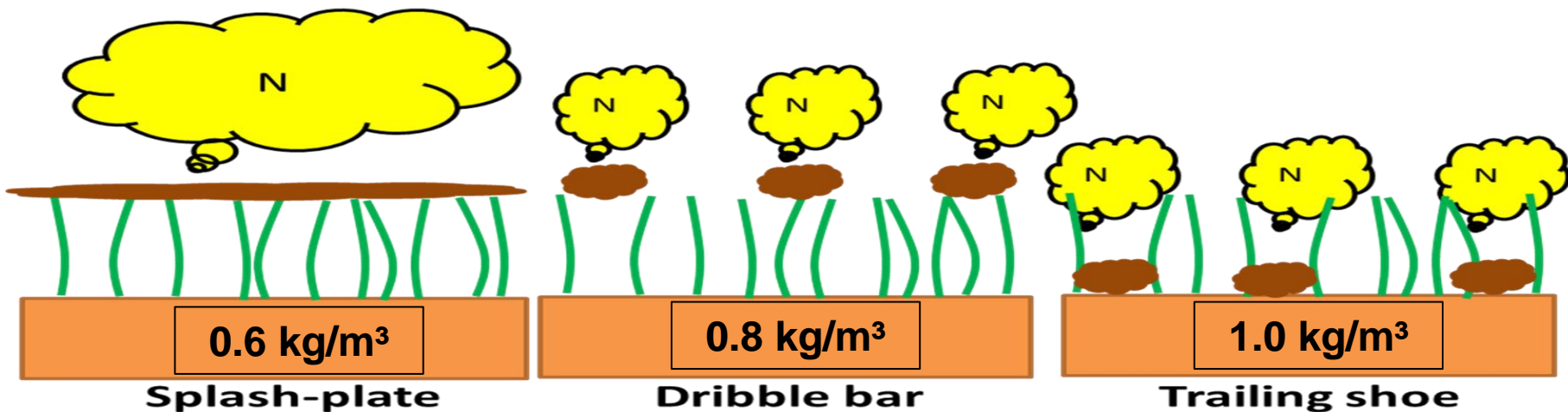
## Weather

- 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

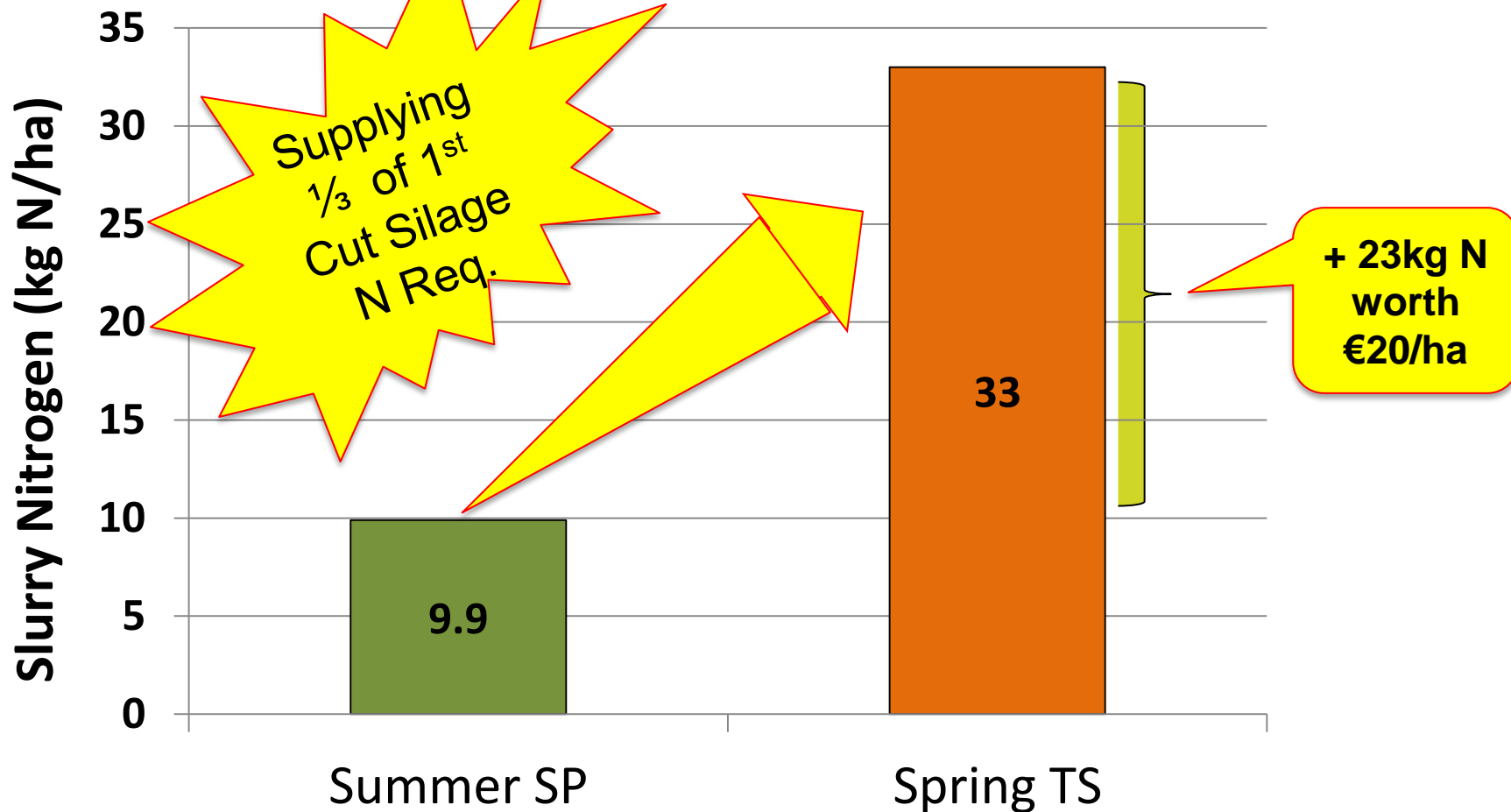


# Fertiliser replacement value?


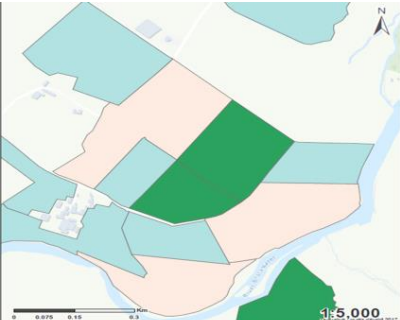

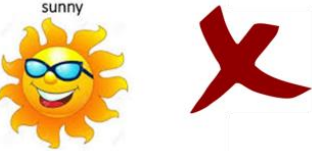



Maximising the value of slurry N

Cattle slurry applied at 33 m<sup>3</sup>/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"> <li>• Crop P &amp; K requirements</li> <li>• Target fields with highest nutrient need</li> </ul> 	<ul style="list-style-type: none"> <li>• Spring better than summer</li> <li>• Cool, Damp Conditions</li> </ul>  	<ul style="list-style-type: none"> <li>• Use LESS application method</li> </ul>  	 <ul style="list-style-type: none"> <li>• Adjust slurry application rates based on DM%</li> </ul> 