Protecting N & P Inputs on Farms

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Nutrient Efficiency – Factors

- Soil Testing
- Soil pH & Liming
- Farm Nutrient Requirements
- Utilising Cattle Slurry
- Selecting Fertiliser Types
- Nutrient Application Programmes
1. Soil Testing - Foundation

- ~ 200,000 soil samples
- Soil fertility (pH, LR, P & K)
- Monitor soil fertility changes
  - Index 1’s to Index 4’s (take action)
- Response to nutrient applications
2. Soil pH & Lime
Double Dividend!

- Increases nutrient availability
  - Soil N release
    - 70kgN/ha/year (€70/ha)
  - Increases soil P fertility / availability
    - Index 1 to Index 2 (10kg P / €25/ha)

~ 50kg P to move 1mg / L
Index 1 to 2
150 kg P /ha
Costs -
€300/ha

Lime
Costs
€25/ha/yr
3. Farm Nutrient Requirements

- Completing a farm fertiliser plan
- Lime advice & plan
- N, P, K & S advice – Rates & Timings
- Farm soil fertility review
- Soil Fertility Mapping
- Meeting farm CC req.’s
4. Efficient Use of Cattle Slurry
Method of Application & Timing

Every 1 m³ = 1 kg N
5. Grass P & K Req. (Index 3)

P & K Requirements of Grazing & Grass Silage Crops

- **Drystock**: P and K requirements are relatively low.
- **Dairy**: P and K requirements show a moderate increase compared to drystock.
- **Grass Silage**: P and K requirements are significantly higher than other categories.

**Legend**:
- Red: P
- Blue: K

kg/ha
Grass Growth (kg/ha/day)

**Well-distributed soils**

**Poorly-distributed soils**

**Spring**

1. **50% P**
   - 2nd / 3rd App

2. **Summer**
   - 50% P
   - 4th / 5th App.

3. **Autumn**

Well-distributed soils

 Poorly-distributed soils

Jan     Feb     Mar     Apr     May     Jun     Jul     Aug    Sep

**Lime**

D.P. Wall, 2017
Farm Fertiliser.. Types

- Protected Urea 46%

- 18-6-12 +S
- 23-10-0 +S

- Cattle Slurry
- 6-5-32

Top Up Options
- 24-2.5-10 +S
- 27-2.5-5 +S

Nitrogen Source

P & K Sources
Grazing

P & K Sources
Silage areas

AGRICULTURE and FOOD DEVELOPMENT AUTHORITY
6. Fertiliser Programme

N, P & K Advice (kg/ha) & fertiliser products (kg/ha) – **Free Draining Soil**

Farm stocked at **210kg Org N/ha** or 2.5 LU/ha

**Soil P Index 2 and K Index 2** Feeding 2.5 t/ha Conc. Feed – P adjustment (- 9kg P/ha)

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<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June / July</th>
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**Early P**

**Mid-Season P**
In Summary

- Soil test results & nutrient decisions / planning
- Lime – The 1st Step – Priming / Conditioning soils
- Prepare farm fertiliser plan & Consult regularly
- Recycle all cattle slurry on silage area
- Identify crop nutrient requirements
- Select a suitable fertiliser blends to match the soils & crops on your farm
For Further Information

Soil & Soil Fertility

The health of our soil is a key component to the efficient utilisation of soil nutrients in the production of food in an environmental and sustainable manner.

What's New

- 3rd Cut Grass Silage N,P,K,S (PDF)
- Teagasc Soil Fertility Report 2020 (PDF)
- Protected Urea - Cost Efficient N May 2020 (PDF)
- Fertiliser Programme Kg Ha Soil P Build Up (PDF)
- Signpost series protected urea- Webinar presentation (PDF)
- Protected Urea List - May 2020 (PDF)
- Common Nutrient Deficiencies in Spring Cereals No.2 (PDF)
- Common Nutrient Deficiencies in Spring Cereals No.1 (PDF)
- Importance of Sulphur (S) for Grass & Crop Production (PDF)
- Grassland Other Nutrients (PDF)
- Protected Urea – Cost Efficient N (PDF)
- Pig Manure Booklet 2020 (PDF)
- Organic Manure N P & K Values 2020 (PDF)
- Fertiliser programme kg ha 2020 April Update (PDF)
- Protected Urea List April, 2020 (PDF)
- Fertiliser Advice for Grass Establishment (PDF)
- W Cereal Fertiliser Advice Update 2020 (PDF)
- 1st Cut Grass Silage N P K Req’s (PDF)
- Technical Bulletin No.5 Potassium (PDF)
- Q & A Protected Urea December 2019 (PDF)
- Early Nitrogen Advice Grassland (PDF)
- Protected Urea List - December 2019(PDF)
- Have we turned the corner with national soil fertility? (PDF)
- Efficient Use of Phosphorus In Agriculture Tech Bulletin (PDF)
- Major & Micro Nutrient Advice For Productive Agricultural Crop