Carefully consider soil and weather conditions before applying N early in the growing season.

Sources of early N
- Ammonium or ammonium forming fertilisers such as slurry, protected urea or urea are safer from nitrate loss through leaching (impacting water quality) and denitrification (releasing greenhouse gases).
- Where tanks must be emptied, use slurry as your early N on the driest fields but keep away from water courses. Low emission spreading of 22kg N/ha (2,000gal/ac) will supply 28kg available N/ha (18 units N/ac) which is adequate to support up to 250t DM/kg dry matter (DM) under good spring grass growing conditions.

Protected urea
 Protected urea has the potential to help Irish agriculture reduce national greenhouse gas and ammonia emissions.
- Using CAN – switch to protected urea (GHG saving).
- Yield and N efficiency effect? Same yield and N efficiency.

Sustainable spring nutrient management

Slurry spreading method
Teagasc recommends use of trailing shoe or band spreader to retain N for grass growth, limit leaching contamination and because of the new national commitments to reduce national ammonia loss.

Slurry timing
Focus on being ready for spring application of slurry just in advance of the rapid increase in growth rates, which typically occurs in March.

Fertiliser planning
Prepare a fertiliser plan based on recent soil test results. A fertiliser plan will:
- Show fields that require lime over the next four years.
- Deliver a field by field plan for the application of farm manures (cattle slurry/FYM).
- Show detailed soil fertility maps for each field.
- Identify fields that need extra P and K to build soil fertility.
- Provide field specific advice for N, P and K for your farm.
- Include a list of fertilisers (shopping list) suitable for the soils on your farm.
- Ensure compliance with farm maximum limits as per new national action programme (nitrates).

Table 1: Decision support guidance for early N decision-making on your farm

<table>
<thead>
<tr>
<th>Check</th>
<th>Consider</th>
<th>Where to check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil temperature</td>
<td>No growth below 5°C</td>
<td>Met Éireann website</td>
</tr>
<tr>
<td>Soil moisture conditions</td>
<td>When conditions allow, prioritise dry soils for early spreading. If soils are saturated or near saturated (SMD -10 to 0) soil structure damage from machinery is.</td>
<td>Met Éireann website</td>
</tr>
<tr>
<td>Forecast</td>
<td>Predicted forecast for cold weather (air temp &lt;4°C) – Little growth.</td>
<td>Met Éireann website</td>
</tr>
<tr>
<td>Grass growth rate</td>
<td>Grass growth / unexpected grass response to N fertiliser &lt; 5kg dry matter/ha will not cover the cost of N fertiliser. On-farm measurement or PastureBase Ireland</td>
<td></td>
</tr>
<tr>
<td>Rate</td>
<td>Economic response is more likely at lower N rates</td>
<td></td>
</tr>
<tr>
<td>Current award</td>
<td>1) Higher yield grass cover will have higher N uptake rate compared with low or bare swards. 2) Swards reseeded in last three to five years will give better N utilisation</td>
<td></td>
</tr>
<tr>
<td>Choosing area of farm</td>
<td>Start with the kind, sheltered fields, avoid watercourses</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Fertiliser N source

Adapted from Forrestal et al. (2018)

Figure 2: Slurry N source

Adapted from Forrestal et al. (2018)

More even spread of nutrients across the spread width.

Michael Hogan and Stephen Grace.

This group of farmers from north Tipperary attended a one-day nutrient management seminar delivered by Claire Mooney and Michael Hogan at the Teagasc office in Nenagh. The seminar took place in the dairy farm near Toomevara, said: “Making best use of slurry and slurry fertiliser is vitally important to maximise grass production while protecting the environment”.

Focus on being ready for spring application of slurry just in advance of the rapid increase in growth rates, which typically occurs in March.