




# When to Apply Early Nitrogen (N)

Lack of nitrogen (N) supply in the soil can limit spring grass growth. The timing and rate of fertiliser N application are key decisions for every livestock farmer. Research has shown a large range in grass response to early N (between 5 to 18 kg DM/kg N applied). While the appropriate application of early N is beneficial, the incorrect application of early N is wasteful, costly, pollutes water and increases greenhouse gas emissions.

The following “Do’s & Don’ts” should guide your decisions around early N application.

## Do’s



1. Refer to Teagasc guidance on the application of early N.
2. Check weather forecast ([www.met.ie](http://www.met.ie)) prior to making fertiliser N applications
  - Check the soil moisture deficits (SMD) for your area and only spread if SMD is greater than zero; and
  - Only apply fertiliser N when soil temperature is greater than 5°C and rising.
3. Target fields for early N that are most likely to respond to an early N application:
  - Perennial ryegrass / recently reseeded fields
  - Drier, free draining fields
  - Fields with a grass cover of greater than 400 kg DM/ha or 5 cm grass
  - Fields with optimum soil fertility, i.e. good P and K status, pH > 6.2
4. Replace chemical N fertiliser on approx.  $\frac{1}{3}$  of the farm with cattle slurry. Target slurry applications to fields with low P & K levels & low grass covers; 25 m<sup>3</sup>/ha (2,500 gals/ac) by low emission application will supply ~25 kg/ha (20 units/ac) of available N.
5. Use protected urea (NBPT) for early N applications
6. Apply up to 30 kg N/ha (24 units N/ac) in 1<sup>st</sup> split in late January or early February and avoid fields that have received an application of cattle slurry.
7. Link your early N application strategy with spring feed budget for the farm.
8. Calibrate and maintain your fertiliser spreader in good condition.

# Don'ts



1. Don't apply fertiliser N before the end of the prohibited spreading period (Table 1).
2. Never apply fertiliser on waterlogged or frozen soils.
3. Don't apply fertiliser if a yellow rainfall warning is in place or is forecast within the next 48 hours.
4. Never apply fertiliser into buffer margins & know your buffer margins.
5. Delay N on bare fields (<400 kg DM/ha); instead spread on fields with 5 cm (cover of 400 kg DM/ha) grass cover or greater.
6. Don't apply fertiliser N on fields that receive slurry in the first round.
7. Don't apply more than 30 kg N/ha (24 units N/ac) in 1<sup>st</sup> split in late January/early February.
8. Don't apply more than 90 kg N/ha (Slurry N + Chemical N) in total up to early April (Table 2).

**Table 1:-** Closed Periods for the application of organic & chemical fertilisers

Zone	Chemical Fertilisers	Organic Fertilisers	Farm Yard Manure
A	15 Sept – 12 Jan	15 Oct – 12 Jan	1 Nov – 12 Jan
B	15 Sept – 15 Jan	15 Oct – 15 Jan	1 Nov – 15 Jan
C	15 Sept – 31 Jan	15 Oct – 31 Jan	1 Nov – 31 Jan

**Table 2:-** Nitrogen fertiliser application plan for the spring period

Month	Product	Rate	Area
January / February <sup>1</sup>	Cattle Slurry	2,500 gals/ac (25 kg N/ha)	1/3 of grazing platform (covers <600 kg DM/ha)
January / February	Protected Urea (NBPT)	23 units/ac (29 kg N/ha)	Remaining 2/3 of grazing platform
March	Protected Urea (NBPT)	46 units/ac (58 kg N/ha)	Entire grazing platform
February / March	Slurry	2,000 gals/ac (20 kg N/ha)	1/3 of grazing platform (paddocks grazed first)
<b>Total N by 1<sup>st</sup> April <sup>2</sup></b>	Slurry + Fertiliser N	70 units/ac (88 kg N/ha)	

<sup>1</sup> Slurry & chemical fertiliser should only be applied once the open period commences

<sup>2</sup> Combination of Protected Urea and cattle slurry available on farm

For further information on any issues raised in this newsletter, or to access other enterprise newsletters, please contact your local Teagasc advisor or see [www.teagasc.ie](http://www.teagasc.ie)