To apply sulphur(S) fertiliser or not, THAT is the question facing grassland farmers today. Sulphur is an essential nutrient for grass growth and is closely associated with Nitrogen uptake and efficiency.

Sulphur use as a grassland fertiliser has declined dramatically in recent years. Like Lime, it has become the forgotten fertiliser of Irish grassland soils. Many grassland farmers tend to forget this essential element in their efforts to meet required levels of lime, Nitrogen (N), Phosphorus (P) and Potassium (K). Even when there is adequate amounts of these grassland nutrients, S deficiency can lead to a reduction in the quantity and quality of the grass crop produced.

**Importance of Sulphur:**
Sulphur is essential for the formation on amino acids, the building blocks for proteins which are needed for growth and development in plants and animals. Again S is required to convert Nitrogen to plant dry matter. As grass grows both Sulphur and Nitrogen are used together so a Sulphur deficiency will decrease nitrogen use efficiency and so reduce yield. Thus, Sulphur is an important nutrient for grassland and is closely associated with Nitrogen uptake and efficiency.

**Traditional Sources of S:**
In bygone times, Sulphur was freely available to grass plants from atmospheric depositions, due to smoke discharges from industrial complexes and domestic fires. However, in recent years this source has become restricted due to the introduction of environmental rules and regulations on the burning of fossil fuels, plastic, etc. Depending on animal's diet, slurry and farm yard manure are a valuable source Sulphur, but it is present in a form that is mainly unavailable to the grass plant during the growing season (for example cattle slurry contains a total of 2.5 units S/ 1,000 gallons of which 30% is available, therefore 0.8 unit S/1,000 gallons available).

Chemical fertilisers containing Sulphur are now the main source of S for grassland fertilisation.

**Symptoms of S Deficiency:**
There is no reliable soil test to determine Sulphur levels in soils. Sulphur levels can only be verified through herbage analysis. Sulphur deficiency prevent grass plants from utilising Nitrogen, which causes the older leaves of the grass plant to turn light green or yellow (N deficiency) and reduces overall yield. This will occur even where is known adequate levels of lime, Nitrogen, Phosphorous and Potassium.
have been applied. A Sulphur deficiency affects the younger plant leaves where leaves turn a pale yellow colour.

**Soils Short on Sulphur:**
Sandy, lighter soils with low organic matter contents are generally more prone to Sulphur deficiency.
Up to 30% of Irish soils are in this category and will benefit from S application.
Current research shows that S deficiency is not just confined to light textured soils and S deficiencies are occurring on heavy textured soils in early spring.

Avoid as excess Sulphur applications during the growing season as it may affect the trace element nutrition of both plants and animals.

**Sulphur Fertiliser Advice:**
The response to S fertiliser increases as the rate of N fertiliser increases.
- Apply 20 kg/ha per or 16 units/acre year for grazed swards on a little and often approach starting in early spring.
- For silage swards apply 20 kg/ha or 16 units/acre of S per cut.
- Avoid over application of S as it will trigger a Copper/Selenium deficiency in livestock

**Sulphur Fertilisers:**
Sulphur can be applied as part of a fertiliser programme during the grass growing season as either straight or compound type fertilisers that contain S.

Common S fertilisers available on the Irish market are, 18-6-12 + 5% S, 27%N + 5%S, Ammonia Sulphate 21% N & 24% S etc.

**Animal Health Implications:**
For permanent pasture apply the level of Sulphur recommended for either grazing (20kg S/ha/year) or silage swards (20kg S/ha/cut) to avoid any problems with induced trace element deficiency in grazing livestock as mentioned above.
For further information on soil & soil fertility, log onto [www.teagasc.ie/soil/](http://www.teagasc.ie/soil/)

**Caption for Photo:**
"Sulphur deficiency will influence grass sward yield and quality".