

Sweet Silage

Balanced nutrition for better silage

Balanced nutrition is the key to high quality silage.

Home-grown grass is the lowest cost feed on livestock farms.

From a nutrient perspective, we need to consider the balance between quantity and quality of grass silage.



Quantity:

What nutrients are needed to optimise dry matter (DM) yield per hectare?

Quality:

What nutrients are needed to optimise the feed value of silage for animal health and performance?

Balanced nutrition plays a key role in optimising both quantity and quality. Silage requires large amounts of nitrogen (N) and potassium (K) to drive growth but what else do these nutrients need to fulfil their role in balanced nutrition?

Nitrogen needs Sulphur to optimise grass growth and quality:

NITROGEN (N)

- Key driver of growth and DM yield
- Key in protein formation
- Required in large amounts for silage (80 – 100kg/ha)

SULPHUR (S)

- Increases the uptake and use efficiency of N
- Sulphur and Nitrogen work in synergy to optimise DM yield
- Sulphur and Nitrogen work in synergy to optimise protein content
- Optimum silage quality requires N & S in a ratio of 12:1 or less

Livestock need Potassium and Sodium to be in balance

POTASSIUM (K)

- Key driver of growth and DM yield
- Essential for aiding nutrient uptake, plant health photosynthesis
- Required in large amounts for silage (90 – 140kg/ha), but...
- ...excess K can reduce magnesium absorption from the rumen and affect palatability

SODIUM (Na)

- Sodium can significantly improve silage quality
- Increases sugar content which helps optimise silage fermentation
- Improves digestibility and palatability
- Maintaining a balance between K and Na in silage offsets the impact of high K levels and improves the K:Mg ratio
- Aim for a K:Na ratio of < 10:1

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Sweet Silage



24-0-13 + 5 SO₃, 3 Na₂O

22-4-13 + 5 SO₃, 3 Na₂O

23-0-13 + 5 SO₃, 3 Na₂O

22-3-13 + 5 SO₃, 3 Na₂O

Nitrogen

in ammonium and nitrate forms for rapid uptake, DM yield and protein formation

Phosphate

available with P where soil indices are low, or no manures are being applied

Potassium

water-soluble potash to drive yield and nutrient uptake

Sulphur

in the ideal N:S ratio of 12:1 to optimise NUE, DM yield and protein formation

Sodium

ideal amount (RB209) to increase sugar content, improve fermentation and palatability and maintain the K:Na < 10:1

Sodium

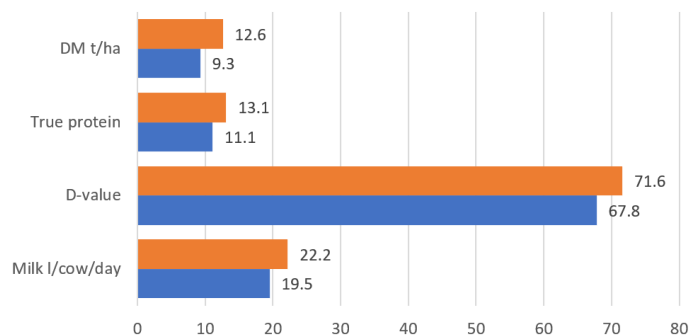
The benefits of including sodium in silage fertiliser were demonstrated in an independent trial by National University of Ireland, Galway in 2019.

The trial compared a Sweet Silage blend against a 'standard' silage CCF compound in relation to yield and forage quality.

Parameter	24-6-12 CCF	Sweet Silage	+/-
Yield, t/ha DM (2 cuts)	8.28	8.43	+ 1.8%
Crude protein (%)	23.4	24.7	+ 5.6%
D-value	67.8	70.7	+ 4.3%
ME (MJ per kg DM)	10.25	10.38	+ 1.3%
Sugar (%)	5.19	6.28	+ 21.0%

Nitrogen and Sulphur

The benefits of sulphur on grass quantity and quality arising from the synergies between N and S are long established and well understood, as demonstrated by the trial data. And yet S fertilisers are only applied to 17% of the total silage crop area (BSFP, 2019).



Benefit of Sulphur on grass quality and production - Bouchard et al, Journal of Dairy Science, 1973

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