

Fertilising 3rd Cut Grass Silage

June, 2020

Third cut silage maybe an option in 2020 to replace and build silage reserves on many farms for the coming winter. This crop will be lower yielding compared to 2nd cut silage due to the time of year. Where two cuts have been taken to date it is important to ensure that 3rd cut crops are fertilised based on expected grass yields and consider replenishing soil nutrients levels in these intensively silage fields.

Intensively cut grass silage has a large demand for K with every 1 ton DM removing 25kg K/tonne. For example a 2 or 3 cut silage system will remove 10t/ha DM and up to 250 kg K/ha. Table 1 shows the recommended levels of K for silage crops based on soil K levels and the typical DM yields. Additional K is required at soil K index 1 and 2 to build soil K levels over time. Build up rates of K should be applied in the autumn time to reduce the risk of grass tetany in the spring time. To maintain soil K levels (Index 3) these amounts need to be applied through the application of cattle slurry and, or, chemical K fertilisers.

Table 1 Recommended rates of K for 1st, 2nd & 3rd cut grass silage.

Soil Index	1 st Cut 5 t/ha DM	2 nd Cut 3 t/ha DM	3 rd Cut 2 t/ha DM	Total K (kg/ha)
1	185	75	50	325
2	155	75	65	290
3	125	75	50	250
4	0	0	0	0

Fertilise 3rd cut grass silage based on crop yield potential. Table 2 below shows the fertiliser requirements based on a grass dry matter yield of 1.5 to 3t DM /ha (3 to 6t fresh grass/ac). Suggested fertiliser programmes are shown with and without cattle slurry at various rates depending on grass yield.

Table 2:- Third Cut Silage N, P & K Req. (off-takes)^{3,4} Based on Grass Yield & Fertiliser Programmes

Grass Yield (ton DM/ha) ²	N kg/ha (units/ac)	P kg/ha (units/ac)	K kg/ha (units/ac)	S kg/ha (units/ac)	Fertiliser Options ¹	
					No Slurry ¹	Cattle Slurry gal/ac ⁶
1.5 (3t/ac fresh grass) ⁵	38 (30)	6 (5)	38 (30)	4.5 (3.5)	1.6 bags/ac 15-3-20 + S	1,000gals/ac 0.6 bags/ac ProUrea +S
2 (4t/ac fresh grass) ⁵	50 (40)	8 (6)	50 (40)	8 (6)	2 bags/ac 15-3-20 + S 0.2 bag/ac ProUrea 46	1,500gals/ac 0.8 bags/ac ProUrea +S
3 (6t/ac fresh grass) ⁵	75 (60)	12 (10)	75 (60)	12 (10)	3 bags/ac 15-3-20 + S 0.3 bag/ac ProUrea 46	2,000gals/ac 1.2 bags/ac ProUrea+S

¹ Protected Urea (Urea 46% N) or (Urea 40% + 6% + NBPT). ² Apply 4kg P & 25kg K per tonne of grass dry matter (DM). ³ N, P & K advice for crop off takes based on grass DM yield at harvest time. ⁴ Apply additional P & K for soil fertility build up after grass harvest refer to Teagasc Green Book for specific rates. ⁵ Fresh grass @ 20% DM. ⁶ Slurry applied with low emission applicator (N-P-K = 6-5-30).

K Build-Up

Apply additional K after 3rd cut silage harvest to replenish & build soil K levels (see table 1).