

Reseeding Pasture: Should You Consider Chicory or Tyfon?

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Weaned lambs can achieve high daily live-weight gain from grazed grass offered as the sole diet. Nevertheless, producers are often unable to finish lambs without concentrate supplementation. Previous studies at Athenry have clearly demonstrated, that whilst concentrate supplementation at pasture increases lamb performance, it is not economically justified for lambs that are marketed after the end of June. In recent years there has been interest by mid season prime lamb producers in including alternative forages, particularly tyfon, when reseeding pasture for weaned lamb finishing. Tyfon is a brassica, a cross between stubble turnip and chinese cabbage. It only survives for one season and provides up to 3 grazings with most of the forage produced in the first rotation.

Chicory is a perennial forage crop with a deep tap root that is tolerant to drought. There is evidence that it may have anthelmintic properties consequently reducing internal parasites in sheep. Chicory has a persistency of up to 5 years depending on sward management. A recent study was undertaken at Athenry to evaluate the effects of reseeding and the use of alternative forages, namely tyfon and chicory, on lamb performance post weaning.

Grazing Study

The effects of tyfon and chicory, grazed either as pure stands or in combination with perennial ryegrass, on lamb performance post weaning were evaluated in a recent grazing study at Athenry. The performance of lambs grazing old permanent pasture was the bench mark to determine the benefits from reseeding. Paddocks were ploughed and seeded on 29 May to give the following treatments:

- (i) Perennial ryegrass (PRG)
- (ii) Chicory plus PRG
- (iii) Tyfon plus PRG
- (iv) Chicory
- (v) Tyfon

A sixth treatment consisted of old permanent pasture.

The perennial ryegrass mixture was based on intermediate heading varieties. The grass seed mixture was Aberdart, Aberstar, Greengold and Dunluce at 2.5, 9.9, 7.4 and 7.4 kg/ha, respectively.

In addition Chieftain and Crusader varieties of clover were included at 1.2 kg and 1.2 kg/ha, respectively in the seed mixture. When chicory or tyfon was included they displaced 3.7 kg/ha of the grass seed mixture. When grown as pure stands, chicory and tyfon were seeded at 6.2 kg/ha.

The old permanent pasture had been grazed by ewes and lambs for the previous 10 years, and had been used recently for extended grazing. Its botanical composition was: meadow grass 39%, perennial ryegrass 27%, cocksfoot 11%, clover 8%, timothy 8% and weed species 7%.

Table 1: Effect of sward type on lamb performance

	Sward type					
	Perennial ryegrass (PRG)	Tyfon + PRG	Tyfon only	Chicory + PRG	Chicory only	Old permanent pasture
Live weight gain(g/d)	226	220	213	190	226	219
Kill out (%)	42.1	42.6	42.9	43.2	43.4	42.1

(Keady and Hanrahan 2010)



Studies at Athenry have shown that including tyfon in the reseed had no beneficial effect on lamb performance or stock carrying capacity.

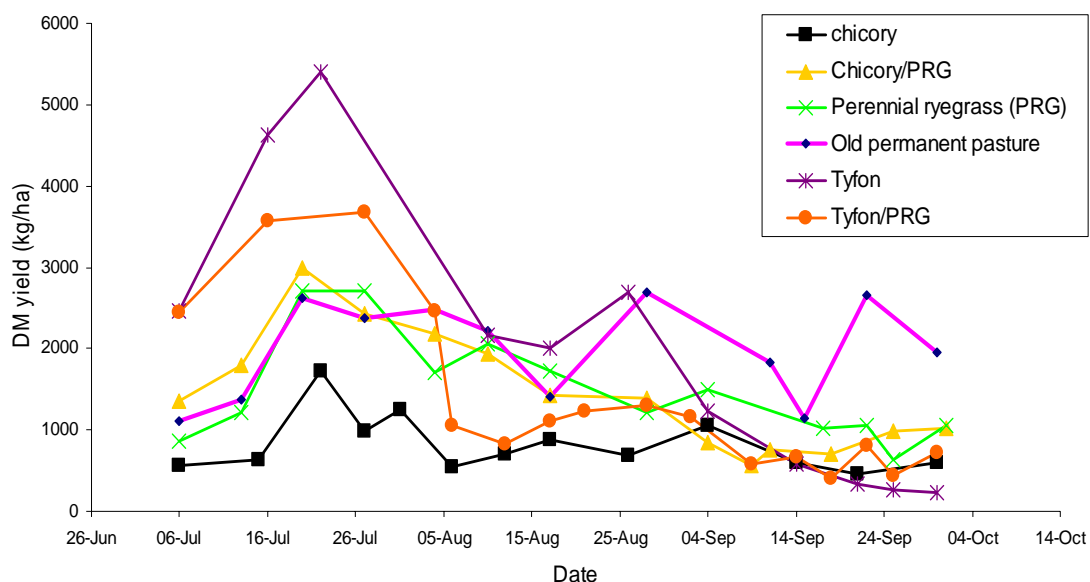
Weaned lambs commenced grazing the experimental treatments from 7 July and were drafted for slaughter every 3 weeks. Lamb performance is shown in Table 1. High levels of lamb performance were achieved across all treatments, the average daily live-weight gain being 217g/day. Lambs grazing the old permanent pasture produced the same daily live-weight gain as the lambs on the new perennial ryegrass sward. Relative to the new perennial ryegrass sward, including chicory in the seed mixture reduced live-weight gain by 36 g/day, consequently increasing the number of days to reach slaughter weight. However, kill-out percentage was increased by 1.2% units. Including tyfon in the seed mixture had no effect on lamb performance. Grazing pure stands of either tyfon or

chicory did not affect performance relative to lambs grazing the new perennial ryegrass pasture or the old permanent pasture. Lambs which grazed either the old permanent pasture, new perennial ryegrass sward and tyfon plus perennial ryegrass sward were drafted for slaughter at similar frequencies.



On many sheep farms which are moderately stocked (less than 9 ewes per hectare) greater performance can be achieved from improved grazing management of existing swards.

The distribution of herbage yield during the grazing season was influenced by the re-seeding treatment (Figure 1). For example, the new perennial ryegrass sward and the swards which included either chicory or tyfon produced the same total dry matter yield during the grazing season. However, the swards containing tyfon produced higher yields during the first rotation but lower herbage yields during the subsequent rotations. For example, the sward containing tyfon produced 200%, 62%, 55% and 69% of the forage produced in the perennial ryegrass sward during rotations 1, 2, 3 and 4 respectively. The corresponding values for the sward containing chicory were 129%, 101%, 83% and 90% respectively. Tyfon grown as a pure stand produced a heavy yield in the first rotation, but lower yields in subsequent rotations. The pure stand of chicory produced consistently low yields throughout the study, producing 74%, 41%, 55% and 63% of the forage produced in the perennial ryegrass sward during rotations 1, 2, 3 and 4, respectively.



(Keady and Hanrahan 2010)

Figure 1: Effects of sward type on pre-grazing herbage DM yield

Herbage utilisation is one of the major factors affecting the cost of forage production. In the current study, to maintain reasonable herbage utilisation, it was essential to graze the swards containing tyfon tight to reduce the quantity of leaf remaining on the ground. Also, it was noted that including tyfon in the grass seed mixture resulted in open swards, subsequently reducing herbage production later in the season with a possible negative impact on sward botanical composition.

Table 2: Effect of sward type on lamb output per hectare (relative to PRG)

	Sward type				
	Perennial ryegrass (PRG)	Tyfon + PRG	Tyfon only	Chicory + PRG	Chicory only
Lamb grazing days	100	94	92	99	56
Live-weight gain (kg/ha)	100	90	87	93	58

Keady and Hanrahan (2010)

The effect of sward type on lamb grazing days has a major impact on stock carrying capacity, and therefore, on live-weight gain per hectare (Table 2). In the reseeded pastures, relative to perennial ryegrass, including either chicory or tyfon in the seed mixture reduced lamb live-weight gain per hectare by 7 and 10%, respectively. Whilst use of chicory as a pure stand resulted in the same lamb

daily live-weight gain as perennial ryegrass (Table 1), live-weight gain per hectare was reduced by 42% due to lower herbage production.

Experience on a Commercial Farm

A study was undertaken, by Ciaran Lynch, on one of the Sheep BETTER Farms to evaluate the effects of including tyfon in a grass reseed on subsequent lamb performance. From the on-farm study it was concluded that including tyfon in the grass reseed had no beneficial effects on lamb performance. Furthermore, including tyfon in the reseed reduced the number of grazing days per hectare by 19% (Table 3).



Grass becoming established following the first grazing of tyfon.

On the on-farm study it was also concluded that including tyfon in the reseed increased forage yield in the first and second rotations but reduced forage yield in the third and fourth rotations. The results of the on-farm study confirm those of the Atheny study that including tyfon in a reseed had no beneficial effects on lamb performance or on stock carrying capacity.

Table 3. Effects of sward type on stock carrying capacity on a commercial farm

Variable	Sward type	
	Perennial ryegrass (PRG)	Tyfon + PRG
Total grazing days per hectare	3763	3060
No. of lambs per hectare per day	45.9	37.3

Lynch et al. (2009)

Summary

1. Old permanent pasture sustained the same high level of lamb performance (live-weight gain of 219 g/day) as reseeded pasture.
2. Including tyfon in the reseed had no beneficial effect on lamb performance or stock carrying capacity.
3. Including chicory in the reseed reduced daily live-weight gain but kill out percentage was improved.
4. On many sheep farms which are moderately stocked (less than 9 ewes per hectare) greater performance can be achieved from improved grazing management of existing swards.
5. On sheep farms, if reseeding, the priority should be to establish dense productive swards based on perennial ryegrass and clover.
6. Reseeding should occur from July onwards when herbage demand is lowest after lambs are weaned and winter forage requirements have been conserved. Reseeding at this time will provide high feed value grass for finishing lambs during the autumn.

References

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