

## An evaluation of tyfon and chicory, as the sole forage or in combination with perennial ryegrass on the performance of finishing lambs

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**Introduction** High levels of lamb growth post weaning can be achieved from grazed grass as the sole diet (Keady and Hanrahan 2009a,b). However many commercial producers are unable to finish lambs without concentrate supplementation. Keady and Hanrahan (2007) concluded that, whilst it is not financially justifiable, concentrate supplementation increased lamb performance. In recent years there has been interest in the use of alternative forages, grazed *in situ*, and offered either as the sole forage or in combination with grazed grass to improve lamb growth post weaning. The aim of the current study was to evaluate the effect of tyfon and chicory offered either as pure stands or in combination with perennial ryegrass on lamb performance. The effect of old permanent pasture was evaluated to determine the benefits to lamb performance from reseeding with perennial ryegrass.

**Materials and methods** Three 1.36 ha paddocks, each were divided into three sections. On 29 May one third of each paddock was reseeded with either perennial ryegrass (PRG) at a seeding rate of 12 kg/ha, tyfon/PRG mixture at 1.5 and 10.5 kg/ha or chicory/PRG mixture at 1.5 and 10.5 kg/ha, respectively. A fourth paddock was divided into 4 equal sections and 2 random sections were seeded with either tyfon (2.5 kg/ha) or chicory (2.5 kg/ha). Prior to reseeding all paddocks received the following fertiliser (kg/ha): 51 kg N, 25 kg P and 111 kg K. Old permanent pasture (OPP) (1.3 ha) (*Poa species*, *Lolium perenne*, *Dactylis glomerata*, *Trifolium repens*, *Phleum pratensis* and weed species accounted for 39%, 27%, 11%, 8.5%, 7.5% and 7% of sward cover, respectively) which had been grazed by ewes and lambs for the previous 20 years was divided into 3 paddocks and received fertiliser N (51 kg/ha). On 7 July 269 lambs (Suffolk-x, mean live weight 29.5 kg) were allocated to the six treatments at random balanced for dam age, breed, and rearing type. The initial number of lambs per treatment was based on the DM yield at the start of the study. The lambs were rotationally grazed without concentrate supplementation to pre-determined sward heights. At 3-week intervals lambs were drafted for slaughter and carcass weight, and conformation and fat classifications were recorded. Additional lambs were used in a “put and take” system to enable grazing days for each treatment to be determined. All treatments received fertiliser N (31 kg/ha) after the first rotation and in early September. The data were analysed using PROC GLM of SAS.

**Results** The effects of forage type on lamb performance to slaughter are presented in Table 1. Lambs grazing chicory/PRG had a higher carcass weight ( $P<0.05$ ) and kill out ( $P=0.05$ ) but tended to have a lower daily live weight gain ( $P=0.06$ ) relative to lambs grazing PRG reseed. Relative to chicory/PRG, lambs grazing tyfon/PRG were lighter at slaughter ( $P<0.05$ ), had a lighter carcass weight ( $P<0.05$ ) and were slaughtered at a younger age ( $P<0.05$ ). Lambs grazing chicory had higher daily live weight gain ( $P<0.01$ ), slaughter weight ( $P<0.01$ ) and carcass weight ( $P<0.01$ ) and tended ( $P=0.07$ ) to be younger at slaughter relative to lambs grazing tyfon. Relative to PRG reseed, lambs grazing the OPP were younger at slaughter ( $P<0.05$ ). Ram lambs had significantly higher live weight gain ( $P<0.001$ ) than ewe lambs (251 v 182 g/d) and were younger at slaughter (68 v 91 days). Treatment had no effect ( $P>0.05$ ) on carcass conformation or fat classification. The PRG sward had the highest number of lamb grazing days whilst the pure stand of chicory resulted in the lowest stock carrying capacity.

**Table 1** The effects of forage type on lamb performance

	Forage						s.e.	sig	Contrasts				
	Perennial ryegrass (PRG)	Chicory PRG (CP)	Tyfon PRG (TP)	Chicory (C)	Tyfon (T)	Permanent pasture (OPP)			PRG TP	PRG CP	CP TP	C T	PRG OPP
Days to slaughter	86	90	80	78	75	78	3.5	*	NS	NS	*	P=0.07	*
Slaughter wt (kg)	45.1	45.5	44.6	45.7	44.4	45.2	0.33	NS	NS	NS	*	**	NS
Weight gain(g/d)	220	206	212	226	208	223	6.2	NS	NS	P=0.06	NS	**	NS
Carcass wt (kg)	19.0	19.6	18.9	19.8	19.0	19.0	0.24	*	NS	*	*	**	NS
Kill out (g/kg)	421	432	426	434	429	421	4.7	NS	NS	P=0.05	NS	NS	NS
Lamb grazing days/ha	4833	4788	4553	2698	4462	-	-	-	-	-	-	-	-

**Conclusions** Including alternative forages with perennial ryegrass during reseeding had no beneficial effects on lamb performance. Post weaning lamb performance on old permanent pasture was similar to that achieved from new reseeded perennial ryegrass pasture.

### References

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