

Longford Red Meat Group – Producer Demonstration Site trial update March 2018.

The Longford Red Meat Group (LRMG) trial at Ratho, Bothwell is comparing the profitability of four different irrigated grazing systems:

- Clover rotational (CR)
- Clover set stocked (CS)
- Ryegrass rotational (GR)
- Ryegrass set stocked (GS)

The question the group wants to answer from this project is how to maximise the gross margin per hectare in irrigated grazing systems, over a 12 month period. The trial is assessing both the breeding and finishing systems. The results from the summer finishing period from weaning (28 November) to end of February have been analysed and are summarised here.

Summary of the summer finishing period

These results are consistent with those from the year 1 trial (at Chester) and also the lambing period (September until weaning) for this trial. The poor performance of the GR treatment remains unexplained at this stage and will be a major focus going forward. It may be related to a combination of NDF and its influence on total intake and small variations in energy content per kg of dry matter. It may also be a result of interaction between temperature and irrigation or either of these alone. Clover is more water efficient than ryegrass and is able to tolerate higher temperatures and still perform optimally. Ryegrass can be impacted by temperatures in the mid-twenties whereas clover will not be impacted until temperature reach over 30°C.

	Stocking rate (lambs/ha)	Kg lambs produced/ha	Average liveweight gains (g/day)	Expenses\$/ha*	Income/ha	Gross margin/ha
CR	60	765	147	799	6,921,	1,499
CS	60	879	209	500	6,711	1,718
GR	60	221	-4	777	2,929	-172
GS	45	251	70	367	3,972	132

** these expenses do not include capital costs (fencing and trough infrastructure); and do include lamb purchases, irrigation, supplementary feed, labour, animal husbandry, animal deaths*



Feed quality

Regular feed tests have been taken from the trial treatments so that the influence of feed quality (in particular, metabolisable energy (ME) and neutral detergent fibre (NDF)) on the trial results is known. Samples were collected on 21/8/17, 19/10/17, 6/11/17, 3/1/18, and average results for each treatment over the trial period are presented in the table below.

	Crude protein	Neutral Detergent Fibre	Metabolisable energy
CR	30.7	26.7	12.0
CS	30.7	26.1	12.1
Clover average	30.7	26.4	12.0
Clover typical	27	26	12
GR	17.8	40.4	12.3
GR pre [^]	18.1	40.0	12.1
GS	20.2	43.8	11.8
Grass average	18.7	41.4	12.1
Ryegrass typical	20	45	11.5

[^] GR pre sample was taken from the grass rotational paddock which was scheduled to be grazed next. The CR and GR samples were taken as bulked samples across all paddocks in each of these treatments.

In interpreting these feed test results it is important to understand what the animal requirements are – ideally this would be crude protein 18, NDF 26 and ME 13. The feed quality results indicate significant differences between the clover and grass treatments for NDF and crude protein, while ME was not significantly different. Within the clover and grass treatments (i.e. comparing set stocked with rotational grazing) there were no significant differences. The ryegrass average results indicate that all parameters in the trial are better than ideal (i.e. the quality of the ryegrass pastures is high), while the clover meets the ideal values.

Animal health

FEC tests have been taken regularly since weaning, and results are presented in the table below. The GR treatment has had the highest worm burden of all treatments. The set stocked treatments are typically lower FEC than the rotational, and the GS treatment is lowest overall (possibly a reflection of the significantly lower stocking rate in this treatment). The FEC results highlight the rapid population increases in worms that can occur over a short period, and the importance of regular monitoring of lambs to ensure that this issue doesn't impact animal performance and liveweight gains.

	28/11/2017	19/12/2017	15/01/2018	22/01/2018	1/02/2018	22/02/2018	Average
GS	100	0	45		400	0	109
GR	175	0	165	1300		25	333
CS	150	25	120		525	0	164
CR	550	50	105		200	0	181

Where to from here?

Since the lambing trial summary (January 2018), we have done some further investigations into the likely reasons for the results being observed in the trial.



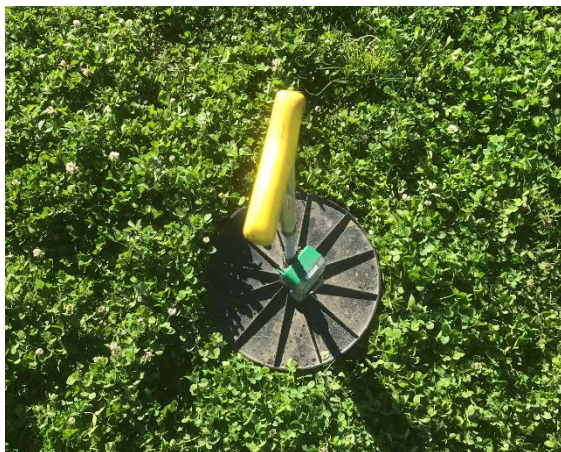
The feed quality data is providing some insights, and preliminary investigations are highlighting complex interactions between iNDF, crude protein, metabolizable energy, digestibility, rumen passage time and animal appetite. This has reinforced our belief that grazing and irrigation best practice are key to understanding the differences in performance (liveweight gains) of the different treatments in this trial. Further work needs to be done to better understand any animal health or environmental variables (e.g. water or temperature stress) in addition to the nutritional variables influencing the results of this trial.

Key messages

What the results so far mean for management are:

1. Minimising the loss of quality in ryegrass pastures during spring by aggressive grazing and optimal irrigation management to maintain pastures in a vegetative state
2. Feed quality is critical (managed via grazing pressure)
3. Irrigation management is critical to avoid pastures becoming reproductive and NDF increasing (via dead material accumulation)

In hosting the trial, John notes that *“the ryegrass performance has been very disappointing. Irrigated ryegrass liveweight gains have always been a problem, and even with good grazing management it’s hard to make it profitable. The better returns from set stocking vs rotational is also interesting, and shows that liveweight gain is the key driver, not stocking rate for finishing lambs.”*



CR and GR treatments on 22 February 2018

