Low Stocking Rate Group (2.5 HF Cows/ha)

Critical Issues

1) **Maintain post-grazing height at between 5 – 5.5cm**
2) **Maintain pre-grazing yield at 2170kg and rotation length at 45 days**

Situation

Figure 1. Autumn Feed Budget

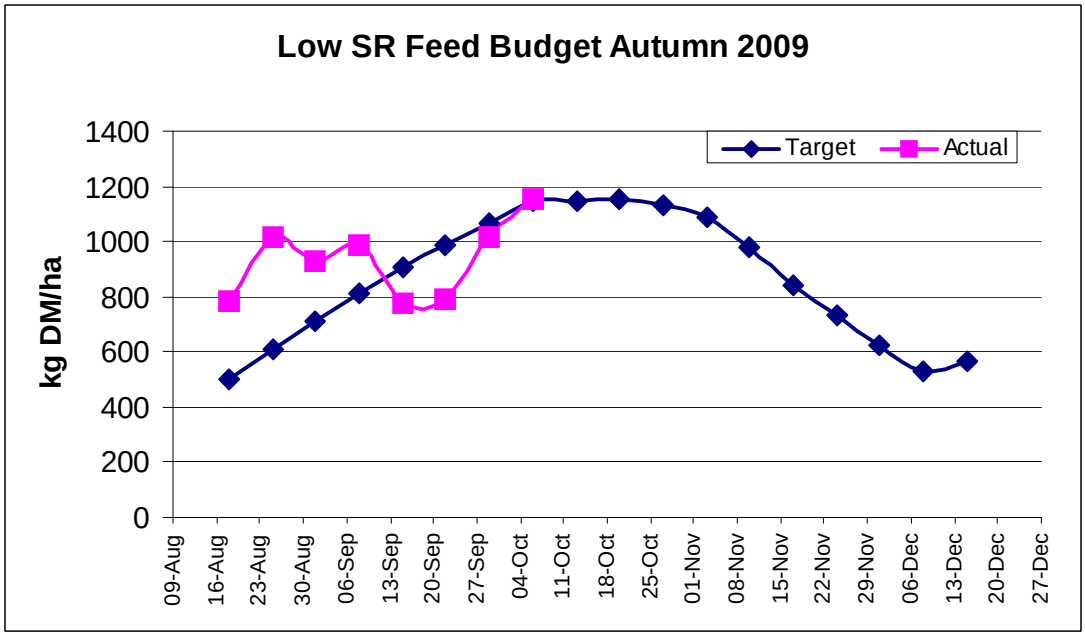
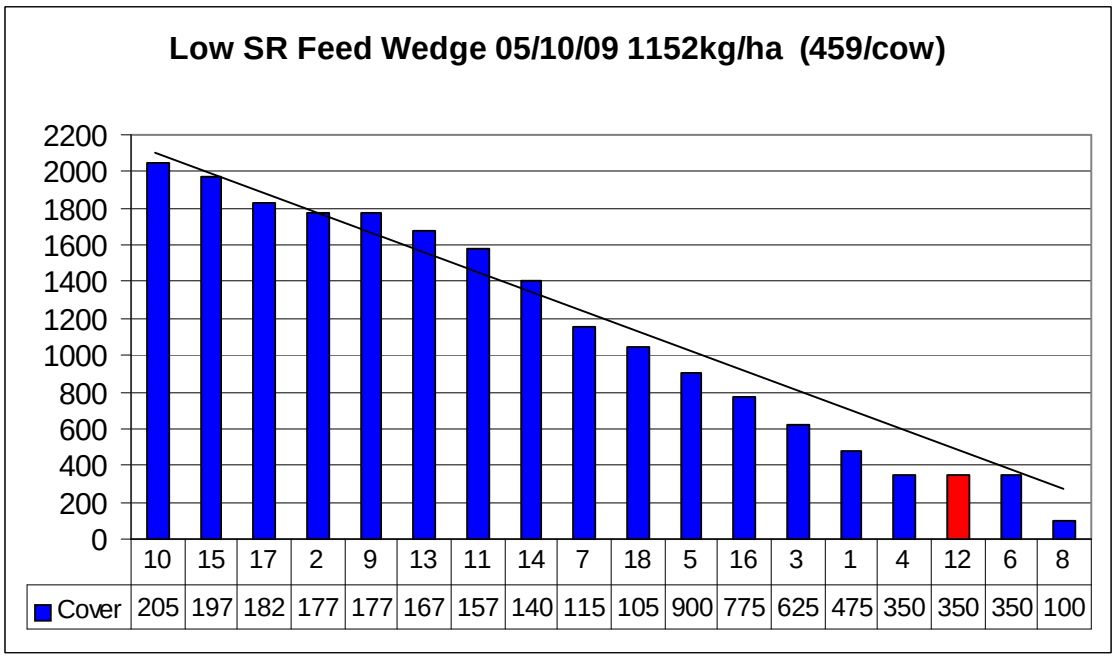


Figure 2. Farm Feed Wedge 05/10/09



1) As can be seen in figure 1, we remain on target in terms of farm cover and have an even shaped feed wedge that meets our target line (Figure 2). Therefore, we have stopped feeding concentrates and cows are now on their full allocation of grass (17kg).
2) We have now reached our peak cover and need a growth rate of 43kg/day to maintain this for the next 3 weeks.
3) Cows are currently on 36-hour allocations but this will be reviewed if weather and ground conditions deteriorate.

4) Growth rate on this farmlet was 47kg/day
5) Block 12 (in red) is currently being grazed by the cows.
6) Target rotation length is 45 days.
7) Ideal pre-grazing yield is 2170kg (2.51*45*17+250)

<u>High Stocking Rate Group (3.3 HF Cows/ha)</u>

Critical Issues

3) **Maintain post-grazing height at between 3 and 3.5cm**
4) **Maintain pre-grazing yield at 2230kg and rotation length at 45 days**

Situation

Figure 3. Autumn Feed Budget

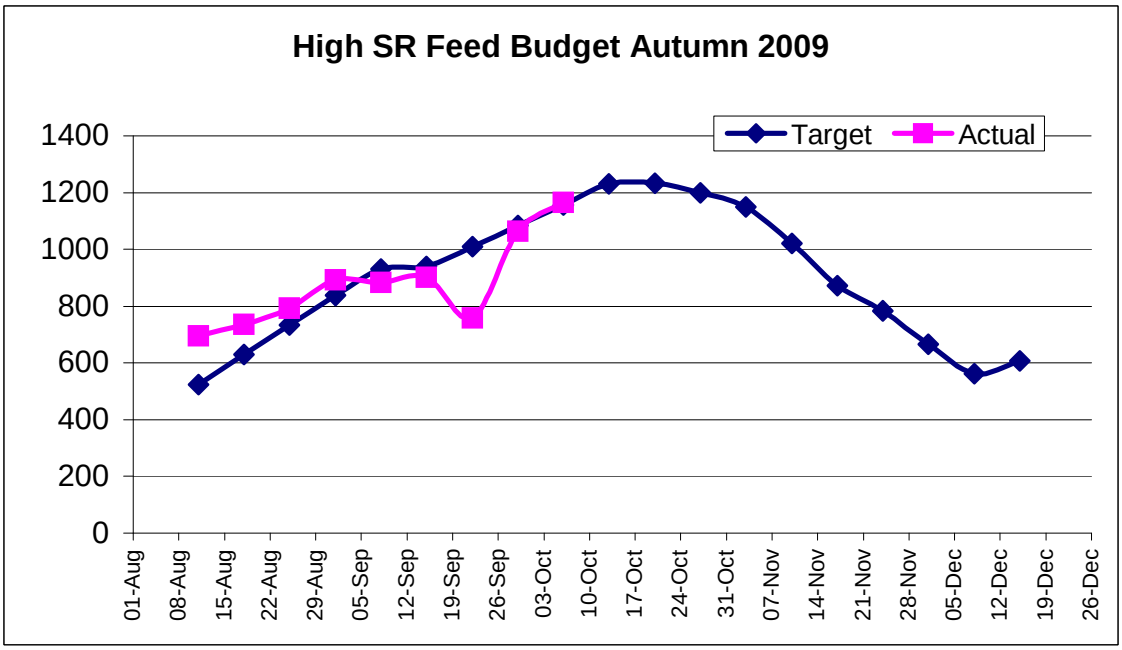
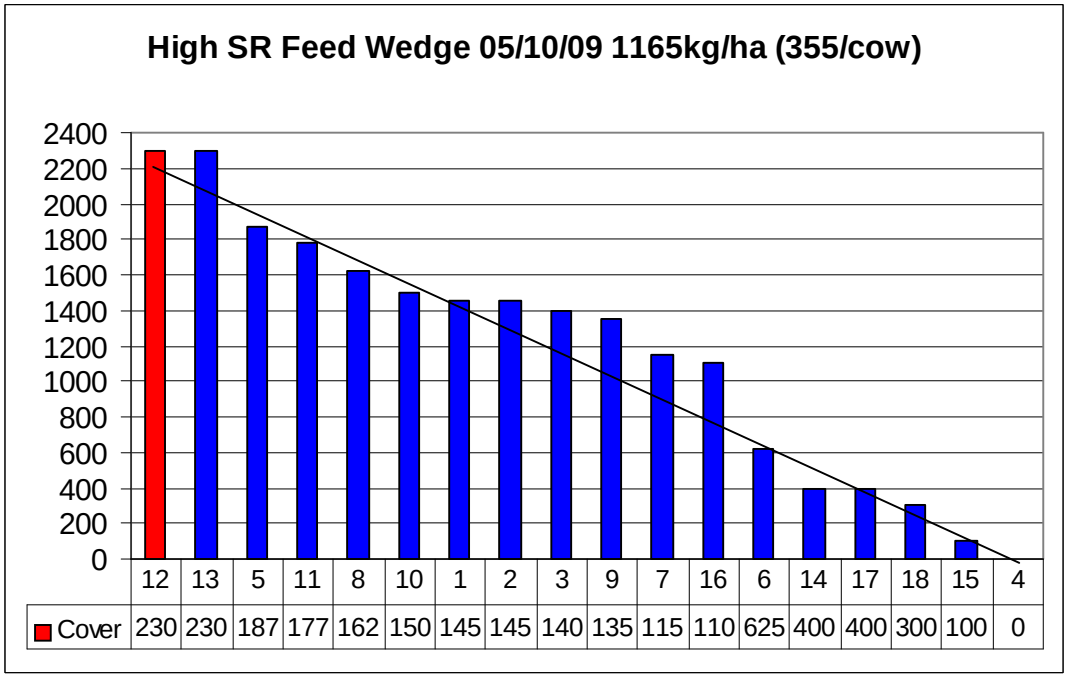


Figure 4. Farm Feed Wedge 05/10/09



1. As can be seen in Figure 3 we are exactly on target in terms of farm cover and have a relatively even shaped feed wedge in Figure 4. Concentrate supplementation is now at zero and cows are on their full grass allocation of 15kg/day.
2. Block 12 (in red) is currently being grazed by cows.
3. Target rotation length is currently 45 days.
4. Growth rate on this farmlet was 58kg/day
5. Stocking rate is 3.28 cows/ha and with a 45-day rotation length our ideal pre-grazing yield is 2227kg (15*3.28*45).

Whole Farm Situation

1. Average soil temperature for the past week was 13.5ºC, last week 14.2ºC.
2. Total rainfall for the week was 0.1mm.
3. Average weekly growth this week was 48kg/day, average for the previous 3 years was 43kg/day.
4. Dry matters were 15.7% on Monday morning.
5. 250kg N/ha have been spread this year.
6. Breeding season commenced on Monday 20th April and ceased on Monday 20th of July (13 weeks).
7. Latest milk quality rest results from the milk processor are; Fat 4.58%, Protein 3.84%, Lactose 4.59%, SCC 311k, TBC 13k, Thermoduric 0, Sediment A.
8. Critical Short-term Actions:
    a. Cows are currently on 36-hour allocations.
    b. Maintain post-grazing height at desired level. As pre-grazing yields are increasing this is becoming increasingly harder to achieve.

Curtins Farm Systems Fertility Performance 2009

The current farm system comparison study at Curtins Farm encompasses three alternative stocking rate treatments. The three stocking rates compared are Low (2.51 cows per hectare), Medium (2.92 cows per hectare) and High (3.28 cows per hectare) stocking rates for Irish dairy farms post milk quotas. The objective of the study is to quantify the impact of stocking density within systems of production based on grazed grass with minimal external feed supplementation. The target grazing intensity, in terms of post-grazing residual sward height for the low, medium and high stocking rate treatments was 5.5, 4.5 and less than 3.5cm, respectively over the season. Each group was managed separately and received a common level of concentrate supplementation. Early season grass growth in 2009 was below expectation and resulted in increased grazing severity for all treatments. Average post grazing residual height was 3.6, 3.4 and 3.3cm for the low medium and high stocking rates, respectively during rotation 1, while total feed allocation per cow per day was 14.0, 12.5 and 12.1 kg DM, respectively.

Table 1 below, outlines the influence of stocking rate treatment on reproductive performance during the 2009 breeding season. Breeding commenced on April 20th and finished on July 20th (13 weeks). Cows were bred to artificial insemination after morning milking using tail paint to aid heat detection. As evidenced from the Table 1, stocking rate had no significant effect on any of the reproductive variables measured. Reproductive performance and in particular pregnancy rate to 1st service and after 42 days of breeding across all groups was poor in comparison with target levels. While not significantly reduced, the poorer reproductive performance of the medium and high stocking rate treatments is consistent with the their increased grazing intensity, reduced feed allowance and lower body condition score at AI when compared to the low stocking rate group. The provisional results indicate that the challenge for higher stocking rate systems will be to increase feed allocation in early lactation to achieve acceptable levels of reproductive performance while avoiding higher residual grazing height and pasture wastage.

Table 1. The Effect of Stocking Rate on Reproductive Performance

Stocking rate	Low	Medium	High	Significance
Calving date	22/02/09	24/02/09	21/02/09	NS
Submission rate (%)	87	74	80	NS
CSI (days)	77	80	82	NS
Preg to 1st Serve (%)	48	37	44	NS
42 day in-calf rate (%)	65	57	54	NS
In-calf rate* (%)	80	74	78	NS
CCI (days)	94	105	104	NS

*13 week breeding season

EXPERIMENTAL PROGRESS REPORT AS AT SUNDAY, 04/10/09

Objective: To compare the biological efficiency of alternative calving date and stocking rate combinations for Irish spring calving pasture-based production systems

Herd Details	EBI (€)	MILK SI (€)	FERT SI (€)	CALVING SI (€)	HEALTH (€)
Average	112	59	45	20	-3

(November 2008 ICBF)

Calving Date Group	Early Calving			Late Calving		
Stocking rate Group	Low	Medium	High	Low	Medium	High
Stocking rate (cows/ha)	2.51	2.92	3.28	2.51	2.92	3.28
Mean calving date	9/2	12/2	11/2	26/2	24/2	22/2
Ear-tag Colour	White	Blue	Orange	White	Blue	Orange
Band Colour	Yellow	Yellow	Yellow	Blue	Blue	Blue
Week Details:						
Area allocated (m^2/day)	2400	2000	1800	2400	2000	1800
Farmlet cover (kg DM/cow)	459	340	355	489	330	336
Pre-herbage mass (kg DM/ha)	1775	1625	1775	1775	1625	1775
Residual grazing height (cm)	5.22	4.75	4.57	5.16	4.61	4.34
Diet (kg DM/cow/day)						
Grass	17	10	15	17	10	15
Silage	0	6	0	0	6	0
Concentrate	0	0	0	0	0	0
Milk solids (kg/cow/day)	1.29	1.19	1.12	1.28	1.17	1.19
Milk yield (kg/cow/day)	15.5	13.8	12.9	15.4	14.5	14.5
% Fat	4.53	4.73	4.75	4.52	4.39	4.49
% Protein	3.88	3.92	3.97	3.88	3.77	3.81
Bodyweight (kg)	566	521	532	570	544	539
Condition Score	2.89	2.94	2.74	2.97	2.82	2.73
Cumulative:						
Milk solids (kg/cow)	372	336	318	342	313	330
(kg/ha)	934	981	1043	858	914	1082
Milk yield (kg/cow)	4857	4315	4132	4540	4226	4329
% Fat	4.16	4.33	4.20	4.02	4.00	4.20
% Protein	3.53	3.48	3.51	3.53	3.42	3.42
Days in milk	237	233	234	219	222	224
Total supplement fed (kg/cow)						
Concentrate	280	283	279	226	228	231
Silage	99	147	155	56	73	79
Conserved silage (kg DM /cow)	921	631	597	921	631	597
Bought in Silage (kg DM /cow)	417	417	417	417	417	417
Farmlet area (hectares)	9.17	7.87	7.01	9.17	7.87	7.01
Number of cows calved	23	23	23	23	23	23
Number of cows in group	23	23	23	23	23	23

NB: These are raw data that have not been statistically analysed and, therefore, no definite conclusions can be drawn from them.