Effect of strategy of forage supplementation and of turnout date in a medium stocking rate system on the main characteristics of dairy cows grazing

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Keywords: decision support system, grazing management, dairy cows

Introduction Having a stocking rate of 2.9 cows per hectare of grassland (35 ares/cow) in Brittany offers many options for turnout date and forage supplementation strategies. For a farmer, knowing the consequences of the different options during the course of the grazing season makes grazing management decisions easier. As experiments on grazing management require considerable resources and are hardly generalisable, various spring scenarios have been tested using a dynamic decision support system, Pâtur'IN (Delaby *et al*., this volume).

Materials and methods The model herd was composed of 40 dairy cows (mean calving date, 01/10; peak milk yield, 35 kg). Fourteen ha of grassland were available for grazing, divided into ten paddocks, half sown in perennial ryegrass (PRG) and the other half in perennial ryegrass and white clover mixtures (PRG-WC). They were characterized by Brittany's average grass growth (Defrance et al., this volume). Average sward density is 235 kg DM/cm per ha for PRG and 205 for PRG-WC. Six scenarios were tested: three strategies of forage supplementation (maize silage fed until 1 April, until 20 April and throughout the entire season) combined with two turnout dates (15 February or 15 March). In each of the six scenarios, cows were supplemented with 2 kg concentrates per day. Until 14 March, animals were offered 16 kg DM maize silage per day in scenarios 2.1, 2.2 and 2.3 and 12kg DM/day in the other scenarios. From 15 March, the amount of maize silage decreased to 8 then 4 and possibly 0 kg DM/day according to the strategy constraints.

Results and discussion With turnout on 15 February (scenario 1.1), farm cover was too low on 1 April to terminate silage feeding (Table 1). This scenario was not sustainable. In the other five scenarios, cows consumed approximately the same amount of forage (2100 kg DM), but the proportion of grazed grass decreased when turnout date or silo closing date were delayed. Scenarios 1.2 and 2.1 had very similar results with a large proportion of grazed grass in the diet (73%) and little harvested grass (20 to 30% of the area). Delaying turnout date allowed forage supplementation to be stopped earlier. Continuous silage supplementation (scenarios 1.3 and 2.3) led to a small proportion of grazed grass in the diet and a high number of harvests.

Table 1 Main characteristics of the six scenarios examined (from 15/02 to 30/06)

Scenario		1.1	1.2	1.3	2.1	2.2	2.3
Turnout date		15th Feb.	15th Feb.	15th Feb.	15th March	15th March	15th March
Silo closing date		1st Apr.	20th Apr.	/	1st Apr.	20th Apr.	/
Silage ingested (kg DM/cow)			564	852	568	676	968
Grass ingested (kg DM/cow)			1521	1265	1515	1406	1145
Number of paddocks cut			2	5	3	4	7
Grass harvested (kg DM/cow)			213	488	260	353	624
Area grazed /rotation (ares/cow)			35/35/28/28	35/35/17.5/24.5	31.5/28/28	28/28/28	28/24.5/21
PreGH / PostGH (cm)			10.0 / 5.4	10.2 / 5.4	11.8 / 5.7	11.3 / 5.6	11.7 / 5.8
	15th Feb.	7 / 340	7 / 340	7 / 340	7 / 340	7 / 340	7 / 340
Days Ahead /	15th March	8 / 388	8 / 388	9 / 390	18 / 823	18 / 823	18 / 823
Farm Cover	1st April	10 / 456	12 / 568	12 / 571	21 / 967	23 / 1061	23 / 1061
(days / kg DM/ha)	20th April	5 / 239	13 / 606	13 / 610	19 / 848	25 / 1158	26 / 1168
	30th June		18 / 836	16 / 754	17 / 779	15 / 707	15 / 702

Conclusions The optimum grazing strategy is determined by the objectives of each individual farmer. To allow supplementation to be stopped quickly, a late turnout combined with a short transition appears best. However, many farmers prefer an early turnout to break away from winter drabness. In this case, full grass date is delayed.

References

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