



# Free-choice diet selection by sheep during peripartum

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## Introduction

- Ruminants modify their feed intake in order to build a balanced diet
- Factors that affect ingestive behavior involve:
  - The physical and chemical characteristics and palatability of the feed
  - Post-ingestive effects, and
  - Physiological state of the animal

## Objective

Evaluate diet selection and productive performance by ewes during peripartum

## Methodology

- Two groups of 12 ewes each were fed *ad libitum* amounts of a total mixed ration (MR) or the ingredients of the ration in a Free Choice (FC) during peripartum (day 100 of gestation until day 60 of lactation).
- Ingredients of the total mixed ration (TMR) were: Sorghum grain, soybean meal, alfalfa hay and oat hay.
- Sheep were randomly assigned to individual pens and dry matter intake was measured daily.
- Body weight (BW) was determined on a weekly basis and body condition score (BCS) every 2 weeks.
- DMI and nutrient intake were expressed per Kg of BW

Table 1. Nutritional composition of the total mixed rations (TMR) fed to ewes in the MR group during gestation and lactation

Mixed ration	% DM	% CP	ME (Mcal/Kg)	% NDF	% ADF
Gestation	89.93	13.52	2.26	59.11	43.68
Lactation	90.77	14.36	2.46	52.61	33.2

## Results

Table 2. Dry matter intake (DMI) and nutrient intake (per Kg of BW) by ewes fed a TMR (MR) or the ingredients of the TMR as a free choice (FC) during the peripartum.

	Group	Gestation		Lactation			
		P	Group.day	P	Group.day		
% DM	FC	24.64 ± 0.67	0.447	0.035	37.57 ± 1.26	0.515	0.329
	MR	25.45 ± 0.68			40.2 ± 1.27		
% CP	FC	5.72 ± 0.1	<0.001	0.11	10.01 ± 0.51	<0.001	<0.001
	MR	3.53 ± 0.1			6.05 ± 0.51		
ME (Mcal/Kg)	FC	58.24 ± 1.8	0.762	0.077	88.78 ± 3.25	0.101	0.309
	MR	58.69 ± 1.82			100.88 ± 3.27		
% NDF	FC	9.73 ± 0.44	<0.001	0.004	13.17 ± 0.48	<0.001	0.488
	MR	14.85 ± 0.44			20.73 ± 0.49		
% ADF	FC	6.88 ± 0.28	<0.001	0.007	9.25 ± 0.29	<0.001	0.451
	MR	11 ± 0.28			13.13 ± 0.29		

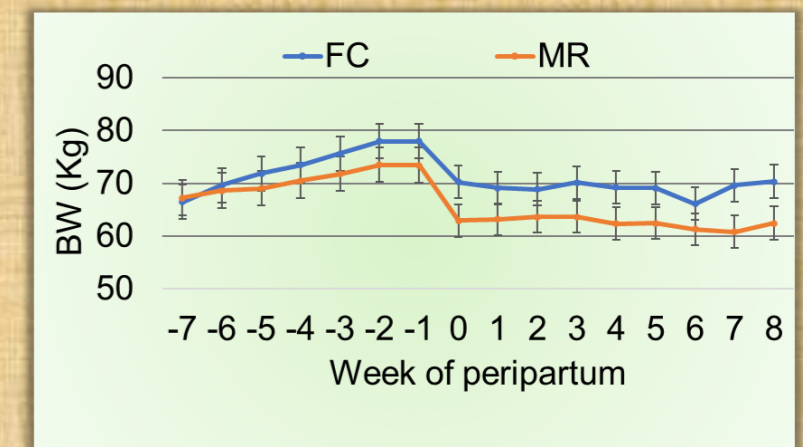


Figure 2. Evolution of BW (Kg ± se) by ewes fed a TMR (MR) or the ingredients of the TMR in a free choice (FC) during the peripartum.

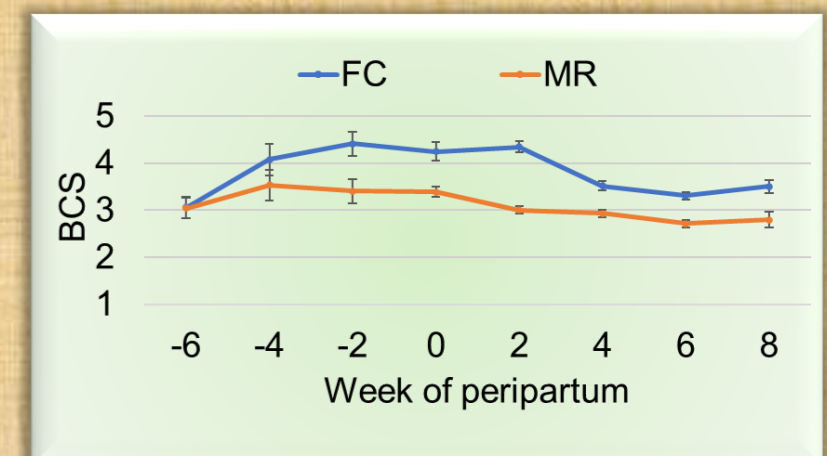


Figure 3. Body condition score (score ± se) by ewes fed a TMR (MR) or the ingredients of the TMR in a free choice (FC) during peripartum

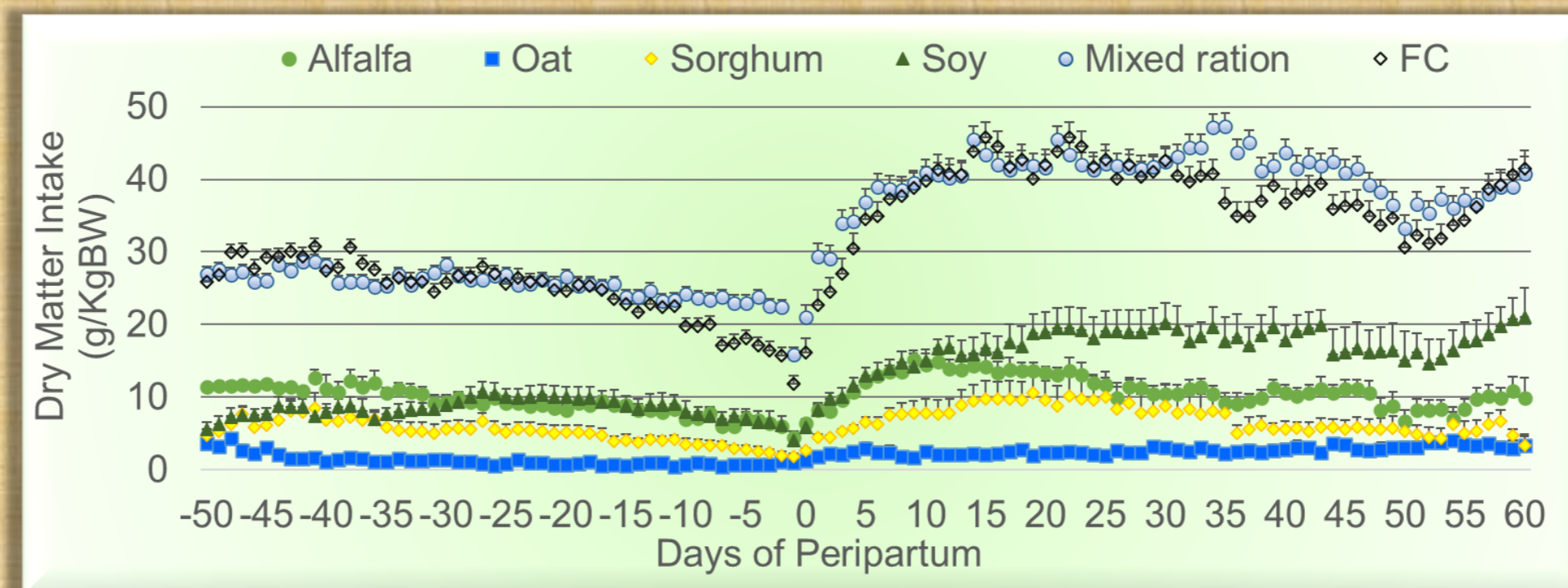


Figure 2. Dry matter intake (average ± se) by ewes fed a TMR (Mixed ration) or the ingredients in the ration in a free choice (FC) during the peripartum. Intake by the FC group is presented by ingredient (Alfalfa and Oat hays, Sorghum grain, Soybean meal) and as the sum of all consumed ingredients.

## Conclusions

- Protein and soybean meal intake increased during lactation, reflecting the ewe's increased protein needs.
- Foraging behavior during free-choice enhanced ewe nutrition, reducing BW and BCS losses during lactation without influencing offspring growth.
- Free-choice may enable ewes to meet their individual nutrient needs, with benefits to their welfare and postpartum ovarian activity.