

## Response of suckler cows to the available sward height in different pastures

K Osoro, M Oliván, R Celaya, JJ Ormazábal

*Instituto de Experimentación y Promoción Agraria, Apdo 13, 33300 Villaviciosa, Asturias, Spain*

One hundred forty winter calving suckler cows and their calves were managed through several years (1990-94) during the spring (March-June) and summer (June-September) grazing seasons on pastures dominated by perennial ryegrass and white clover or in hill pastures of *Agrostis curtisii-Festuca rubra* with areas of *Nardus stricta* and *Calluna vulgaris* to study the animal response to the available sward height in both type of vegetations.

Sward height was measured weekly (HFRO, 1986, Hill Farming Research Organisation, Biennial Report, 1984-1985, 50-51) and cows and calves weighed two consecutive days at the beginning and at the end of each grazing season. Sward height ranged from 4.5 to 10.1 cm in ryegrass-white clover pastures and from 2.2 to 5.6 on hill vegetation community.

On perennial ryegrass-white clover pastures suckler cows were able to replenish 0.8 kg LW/day when sward height was around 8.0 cm, maintaining weight in pastures with 6.0-6.5 cm sward height and losing around 0.5-0.6 kg/day when the sward decreased to 4.5-5.0 cm (Equation 1).

Calves live weight gains ranged from 0.88 to 0.98 kg/day in those managements where sward height ranged from 6.3 to 10.1 cm. However in those where animals had only

available 4.5-4.7 cm of sward height, calves gained only 0.61 kg/day (Equation 2).

In hill pastures the response found was different from that observed on ryegrass-white clover pastures. In vegetations where *Agrostis-Festuca* height was 4.0-4.2 cm, suckler cows maintained weight, and they were able to gain 0.3-0.5 kg/day when the height of those grass species was 4.5-4.8 cm. Live weight gains did not increase further when grazed sward was higher than 5 cm. Very low sward heights are frequent during the summer grazing and suckler cows lose around 0.75 kg/day in sward with only 3.0 cm high (Equation 3).

Calves live weight gains were between 0.82-0.96 kg/day when *Agrostis-Festuca* height was 4.2-4.6 cm, decreasing to 0.6 kg/day when sward height was reduced to 3.0 cm (Equation 4). These live weight gains are similar to those observed in calves grazing perennial ryegrass-white clover pastures with 6 to 10 cm and 4.5-5 cm height respectively.

Therefore the sward height in which suckler cows maximize performance is much lower in *Agrostis-Festuca* hill pastures (4.5-5.0 cm) than in perennial ryegrass (8.0-10 cm). Also the variation in live weight according to the changes in the available vegetation (cm of sward height) are significantly different between both types of vegetation.

	Vegetation : perennial ryegrass-white clover	n	R <sup>2</sup>
Equation 1	Cow (kg/day) = -2.718 (± 0.395) + 0.440 (± 0.062) X <sub>1</sub>	10	0.85
Equation 2	Calf (kg/day) = 0.171 (± 0.144) + 0.110 (± 0.022) X <sub>1</sub>	10	0.72
	Vegetation : <i>Agrostis-Festuca</i> hill pastures		
Equation 3	Cow (kg/day) = -2.681 (± 0.402) + 0.664 (± 0.111) X <sub>2</sub>	11	0.78
Equation 4	Calf (kg/day) = 0.079 (± 0.074) + 0.187 (± 0.021) X <sub>2</sub>	11	0.89

X<sub>1</sub> = sward height in cm, used range from 4.5 to 8.0 cm ; X<sub>2</sub> = sward height in cm, used range from 2.0 to 5.0 cm ; n : number of treatments.