

ysis and pasture height. The spatial and temporal heterogeneity was estimated using the coefficient of variation of pasture height. Animals used were Holstein steers with an initial live weight of 320 ± 11 kg, which were subsequently fasted weighed every 30 days. The biomass accumulation rate estimated from the Kumar & Monteith Efficiency Model (1982), use information provided weekly by the Sentinel 2 satellite in a grid of 50 points per paddock. As expected, the height did not differ between treatments at the beginning of the evaluation period ($P > 0.05$). However, it was higher during the spring (October 2022) under RS compared to CG (11.7 ± 0.7 vs 8.6 ± 0.4 cm, respectively). On the contrary, the CS method showed a greater spatial heterogeneity of pasture height compared to the RG method (0.58 ± 0.06 vs 0.42 ± 0.07) in most of the periods. An association between the biomass accumulation rate and height was found only in the winter. Lastly, no differences were detected on animal performance between stocking methods (372 ± 65 vs 342 ± 68 g animal⁻¹ day⁻¹). In conclusion, the stocking method modified the pasture height and spatial variability but not the animal performance. Fundings: Programa I+D Comisión Sectorial Investigación Científica. Universidad de la República, Uruguay.

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How sheep perceptions of foodscapes determine grazing at patch scale? ask the animals

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A landscape is a vision of features of a particular area from a certain perspective. Mimicking that concept, foodscapes are feeding scenarios, where the perception of the value of food overcomes the amount, location, color, or form of a food item. In a foodscape context the role of the consumer is also acknowledged, meaning that it is recognized that the hedonic value of a food item is context dependent. We hypothesize that structure of intake will change according with the feeding context, provided by environmental conditions (considered here as both meteorological and vegetation variables). For example, we hypothesize that forage mass will have a positive correlation with bout duration. Our objective was to capture time- and scale-dependent grazing behaviour variables, and to determine how environmental conditions correlated with grazing behaviour. More sensitive variables could be further explored to test their potential value to act as proxy-indicators for foodscapes dimensions. We used fifteen Merino Preto sheep ($69.8 \text{ kg} \pm 1.7 \text{ kg}$ live-weight), of which five ewes carried animal-borne point-of-view (POV) cameras (GoPro Inc., San Mateo, CA, USA) to observe the sward “through” the sheep’s eyes. Video sequences (~290 h) were analyzed with an event-logging software for video coding observations (BORIS). Recorded grazing behaviour was split up in meal, bout and station patterns and related with locations of animals in the sward (at site, patch and niche level), using a Global Navigation Satellite System (GNSS) precision-grazing approach (Mr. Lee CatTrack, Catnip Technologies Limited, Anderson, SC, USA). In order to potentiate food choices, we used a Mediterranean naturally-occurring mixed sward with high plant diversity, along 11 weeks of the active spring plant-growth cycle. Grazing variables (duration, frequency, rate), and environmental variables (sward structure, sward nutritive value, sward botanical composition, meteorological variables) were measured. Pearson correlations and simultaneous multiple-regression analysis were used as a synthesis and exploratory analysis (Graphpad Prism, version 8.4.2). Meal duration was the most responsive behavioural variable identified (significantly correlated with 5 of the 8 meteorological variables and with 3 pasture variables (e.g., 0.84 for forage mass $P < 0.001$). In contrast to meal pattern, the bout pattern was not influenced by temperature and relative humidity, but sward botanical composition, namely the proportion of forbs, significantly affected bout size (0.74 ; $P < 0.01$). Crude protein and neutral detergent fiber significantly correlate with interbout interval (0.77 and -0.68 , respectively; $P < 0.001$). In the station pattern, only the preference for grasses was negatively correlated with the sward proportion of grasses (-0.98 ; $P < 0.001$). We concluded that approaching consumer-food interactions as foodscapes is a promising systemic tool to address grazing ecosystems sustainability issues. By simultaneously assessing the food environment and their impact on structure of intake, indicators such as meal duration can be applied to other systems. Funding: FCT_Project_UIDB/05183/2020.

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