EXPLORING THE UTILIZATION OF VARIOUS SUPPLEMENTS TO IMPROVE THE PERFORMANCE OF WINTER CALVES THROUGH A SELF-FEEDING STRATEGY ON NATIVE GRASSLANDS OF URUGUAY

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Low calves´ performance during winter affects the productivity and efficiency of extensive livestock production systems of Uruguay. An experiment was proposed with the objective of exploring the effect of utilising various types of supplements using self-feeding strategies during winter to improve calves performance when grazing deferred native grasslands. The trial was held at INIA Tacuarembó Experimental Station, located in Northern Uruguay at "Glencoe" Experimental Unit, on basaltic medium/shallow soils. Native grasslands paddocks were utilised, having deferred forage from autumn to winter, previously removing dead material from the summer through intensive grazing sessions. The experiment lasted from 19th May to 7th October 2015 (141 days) and used Hereford calves (live weight, LW = 158 ± 21 kg; n = 50) born in spring 2014. Calves were randomly allotted to one of two replicates of the following treatments: Control (C), non-supplemented animals; Self-fed whole maize grain distributed two times a week (MG); Self-fed soybean expeller distributed two times a week (SoyE); Self-fed sunflower expeller distributed two times a week (SunE); Self-fed rice bran distributed two times a week (RB). Daily average supplementation rate was equal for all supplemented treatments (0.8 % LW). No differences between treatments were found for average forage mass and height (P > 0.05; 2894 kg DM/ha and 13.5 cm, respectively), and neither was for the nutritive value of forage (P > 0.05; in average, 6.3 % and 39.4% for crude protein and acid detergent fibre, respectively). Final LW was affected by treatments (P < 0.01), resulting in C ≤ MG ≤ RB ≤ SoyE = SunE. As for average daily gain (ADG), this parameter was also affected by treatments (P < 0.01), resulting in C (-0.031 kg/an/day) < MG (0.142 kg/an/day) < RB (0.298 kg/an/day) ≤ SunE (0.382 kg/an/day) ≤ SoyE (0.450 kg/an/day). No differences between treatments were found for supplement use efficiency (P > 0.05), resulting in an average of 4.7 kg DM/kg LW. All supplements had a positive response to self-fed supplementation on animal performance. These effects were particularly positive when protein supplements were used (SoyE and SunE). Self-feeding technologies would also favour the reduction of costs associated with supplementation practices, as well as reducing labour use, which in turn may result in increasing potential leisure time and/or time allocated to other farm activities.

Keywords: automation, maize, rice bran, soybean expeller, sunflower expeller