Carbohydrate-rich supplements can improve nitrogen use efficiency and mitigate nitrogenous gas emissions from the excreta of dairy cows grazing temperate grass

J.G.R. Almeida 1\*, A.C. Dall-Orsoletta1, M.M. Oziemblowski1, G.M. Michelon1, C. Bayer2, N. Edouard3 and H.M.N. Ribeiro-Filho1

*Animal* journal

Supplementary Table S1 Pre- and post-grazing pasture characteristics, chemical composition and nutritive value of annual ryegrass (Lolium multiflorum cv. Barjumbo) and oat (Avena sativa cv. FUNDACEP - FAPAR 43) grazed by dairy cows without (WS) and with corn silage (CS) or ground corn (GC) supplementation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  | Treatments |  |  |
| Item |  |  | WS | CS | GC | SEM | *P-value* |
| *Pre-grazing* |  |  |  |  |
| Pasture mass, kg of DM/ha | 2595 | 2440 | 2566 | 106.4 | 0.564 |
| Pasture allowance, kg of DM/ha | 41.3a | 30.8c | 34.6b | 0.86 | <0.001 |
| Rising plate meter, cm | 13.8 | 13.1 | 14.1 | 0.64 | 0.504 |
| *Post-grazing* |  |  |  |  |  |
| Rising plate meter, cm | 9.3 | 8.2 | 9.0 | 0.37 | 0.147 |
| *Selected pasture* |  |  |  |  |  |
| *Chemical composition* |  |  |  |  |  |
| DM, g/kg | 170 |  166 |  170 | 4.03 | 0.509 |
| OM4, g/kg of DM | 928 |  925 |  928 | 4.47 | 0.762 |
| CP, g/kg of DM | 219 |  204 |  213 | 6.25 | 0.277 |
| NDF, g/kg of DM | 452 |  450 |  439 | 9.27 | 0.601 |
| ADF, g/kg of DM | 236 |  240 |  231 | 4.50 | 0.350 |
| *Nutritive value* |  |  |  |  |  |
| PDIN1, g/kg of DM | 141 | 133 | 139 | 3.59 | 0.305 |
| PDIE2,g/kg of DM | 107 | 105 | 108 | 1.13 | 0.217 |
| UFL3, UFL/kg of DM | 0.98 | 0.97 | 0.99 | 0.011 | 0.364 |
|  |  |  |  |  |  |
| 1 PDIN: true protein absorbable in the small intestine when rumen-fermentable nitrogen is limiting in the rumen based on INRA feeding system (INRA, 2007).2 PDIE: true protein absorbable in the small intestine when rumen-fermentable energy is limiting in the rumen based on INRA feeding system (INRA, 2007).3 UFL: amount of net energy for milk production based on INRA feeding system (1 UFL = 7.106 MJ of net energy for milk production; INRA, 2007).4 OM: organic matter.a,b,c Values within a row with different superscripts differ significantly at *P*<0.05. |