**Monitoring and assessment of ingestive chewing sounds for prediction of herbage intake rate in grazing cattle**

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## Supplementary Tables

# **Table S1.** *Characteristics of forages used in the experiment.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Alfalfa | Fescue | Mean | RMSE | P value |
| Biomass (g DM/pot) | Tall | 6.5  | 8.4  | 7.5a | 1.31 | <0.001 |
|  | Short | 3.0  | 4.5  | 3.7b  |  |  |
|  | Mean | 4.7b  | 6.5a  |  |  |  |
| Height (cm) | Tall | 23 | 26 | 25a | 3.02 | <0.001 |
|  | Short | 11 | 12 | 12b |  |  |
|  | Mean | 17 | 19 |  |  |  |
| Dry matter content (g/kg) | Tall | 179 | 189 | 184 | 30.1 | 0.292 |
|  | Short | 192 | 197 | 194 |  |  |
|  | Mean | 185  | 193 |  |  |  |
| NDF (g/kg DM) | Tall | 349 | 619 | 484 | 26.3 | <0.001 |
|  | Short | 371 | 643 | 507 |  |  |
|  | Mean | 360a | 631b |  |  |  |

N= 32. Values in parentheses are standard errors. DM= dry matter. NDF= neutral detergent fibre. Means followed by different letters differ significantly (Tukey-Kramer HSD, P < 0.05). RMSE= root of the mean squared error.

**Table S2***.* *Effect of forages on time per bite and allocation of jaw movements of cattle.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Alfalfa | Fescue | Mean | RMSE | P value |
| Time per bite (s) | Tall | 2.09  | 3.04  | 2.57  | 0.51 | <0.001 |
| n= 48 | Short | 1.93  | 2.72  | 2.33  |  |  |
|  | Mean | 2.01b  | 2.88a  |  |  |  |
|  |  |  |  |  |  |  |
| Total jaw movement rate (min–1)  | Tall | 57  | 58  | 58  | 6.40 | 0.774 |
| n= 47 | Short | 54  | 59  | 57  |  |  |
|  | Mean | 56  | 58  |  |  |  |
|  |  |  |  |  |  |  |
| Chewing rate (min–1) | Tall | 48  | 52  | 50  | 6.02 | <0.001 |
| n= 47 | Short | 40  | 51  | 46  |  |  |
|  | Mean | 44b  |  51a  |  |  |  |
|  |  |  |  |  |  |  |
| Total jaw movement per bite | Tall | 2.04  | 2.98  | 2.51  | 0.35 | <0.001 |
| n= 47 | Short | 1.67  | 2.95  | 2.31  |  |  |
|  | Mean |  1.85b  | 2.97a  |  |  |  |
|  |  |  |  |  |  |  |
| Total chews per bite | Tall | 1.71  | 2.64  | 2.17  | 0.32 | <0.001 |
| n= 47 | Short | 1.18  | 2.55  | 1.87  |  |  |
|  | Mean |  1.45b  | 2.60a   |  |  |  |
|  |  |  |  |  |  |  |
| Exclusive chews per bite | Tall | 1.04  | 1.98  | 1.51  | 0.35 | <0.001 |
| n= 47 | Short | 0.67  | 1.95  | 1.31  |  |  |
|  | Mean |  0.85b  |  1.97a  |  |  |  |
|  |  |  |  |  |  |  |
| Chew-bites per bite | Tall | 0.65  | 0.65  | 0.65a  | 0.13 | 0.004 |
| n= 47 | Short | 0.49  | 0.59  | 0.54b  |  |  |
|  | Mean | 0.57  | 0.62  |  |  |  |
|  |  |  |  |  |  |  |
| Proportion chew-bite (\*) | Tall | 0.36  | 0.23  | 0.29  | 0.09 | 0.015 |
| n= 47 | Short | 0.29  | 0.24  | 0.26  |  |  |
|  | Mean | 0.33a  | 0.23b  |  |  |  |
|  |  |  |  |  |  |  |

Values in parentheses are standard errors. Means followed by different letters differ significantly (Tukey-Kramer HSD, P < 0.05). RMSE= root of the mean squared error.

(\*) Chew-bites as proportion of total jaw movements

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