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The objective was to compare DM predictions by a portable near infrared (NIR) device (SCiO Cup, Consumer Physics, St. Cloud, MN) to conventional oven drying on alfalfa haylage (AH), corn silage (CS), and fresh hay (FH). In Experiment (EXP) 1, AH (n = 34), CS (n = 30), and FH (n = 30) were scanned 3 times at room temperature (20°C, RT) in 5 Cups. The entire Cup contents were dried for 24 h at 60°C in a forced air oven to determine DM. Bias, standard error of prediction (SEP), and R^2 were calculated for each Cup. Data were averaged across the 5 Cups and regression analysis was used to evaluate deviation of slopes from 1 and intercepts from 0. In EXP 2, 13 AH and 10 CS were divided into 3 representative subsamples to compare DM predictions in cold (4°C) and warm (39°C) conditions to RT. Bias, SEP, and R^2 were calculated for each temperature. Regression analysis was used as described for EXP 1 to determine deviation of slopes from 1 and intercepts from 0. The DM for AH, CS, and FH in EXP 1 ranged from 29.4–54.0, 29.5–47.7, and 11.1–62.5%, respectively. The greatest biases among the 5 Cups were 1.78, 1.37, and 1.53 for AH, CS, and FH, respectively. Slope did not differ from 1 nor intercept from 0 for AH ($P > 0.10$, $R^2 = 0.98$, SEP = 0.99). For CS, the intercept was not different than 0 ($P = 0.18$) but slope tended to be greater than 1 ($P = 0.08$, $R^2 = 0.95$, SEP = 1.52). The slope and intercept deviated from 1 and 0, respectively, for FH ($P < 0.05$, $R^2 = 0.97$, SEP = 2.14). In EXP 2, the DM of AH ranged from 29.7–52.7% and DM of CS from 29.2–36.8%. When scanned at 4°C, the slope for AH was not different from 1 ($P = 0.19$) but intercept tended to differ from 0 ($P = 0.06$, $R^2 = 0.97$, SEP = 1.93). At 39°C, slope tended to differ from 1 and intercept from 0 ($P > 0.10$, $R^2 = 0.97$, SEP = 1.13). The CS slope deviated from 1 and intercept from 0 ($P < 0.05$, $R^2 = 0.89$, SEP = 2.31) at 4°C but slope and intercept did not differ from 1 or 0, respectively, for CS scanned at 39°C ($P > 0.10$, $R^2 = 0.52$, SEP = 1.81). The SCiO Cup is effective for measuring DM within target harvest ranges. Optimal performance can be obtained by allowing samples to equilibrate to room temperature before scanning.

Key Words: moisture

1665W Occurrence of major mycotoxins in maize silage from 2022 harvest around the globe. I. Artavia*, A. Mueller, and U. Hofstetter, *DSM Austria GmbH, Getzersdorf, Austria.*

Maize silage is widely used as a major source of fiber and energy for dairy cows in many countries around the globe, often representing around half of their dry matter intake. One of the main factors determining silage quality is the mycotoxin contamination, which can occur not only during storage but also during the development of the maize in the fields. The objective of this survey was to measure the prevalence and concentration of contamination of maize silage from harvest 2022, by the 6 major mycotoxins. Within the DSM Mycotoxin Survey, the longest running survey, 947 samples of maize silage from the global harvest of 2022 (September 2022 to February 2023) have been collected. The distribution of samples from region of the world were 97 from Asia and Oceania, 523 from Europe, 4 from Africa, 218 from North America (US and Canada) and 95 from South America (Mexico to Argentina). The methods of analysis were LC:MS/MS and HPLC. Deoxynivalenol (DON) was the most common mycotoxin with 66% prevalence and average of positives 821 ppb (n = 927, all concentrations expressed on dry matter basis), followed by zearalenone (ZEN, 55%, 188 ppb; n = 930), fumonisins (FUM, 41%, 856 ppb; n = 772), aflatoxins (Afla, 5%, 15 ppb; n = 778), T-2 toxin (2%, 38 ppb; n = 710), and ochratoxin (OTA, 3%, 5 ppb; n = 718). Globally, 59% of the samples analyzed for more than 3 mycotoxins, contained also more than one mycotoxin. This shows that co-occurrence is common, and that maize silage can be a source of multiple mycotoxins. The profiles of contamination vary between the regions. The main mycotoxins of risk in Asia and Oceania are ZEN (62%, 897 ppb), DON (55%, 4,116 ppb) and Afla (14%, 84 ppb), in Europe are DON (72%, 695 ppb) and ZEN (59%, 167 ppb), in North America DON (74%, 2,484 ppb) and ZEN (40%, 609 ppb) and finally in South America ZEN (60%, 174 ppb) and DON (30%, 1,469 ppb). The results of this survey underline that the risk of mycotoxin contamination when using maize silage as the base of a diet for dairy cows is high, as they are commonly contaminated by not only one mycotoxin but combinations of them, which adds up to the risk of health and performance losses.

Key Words: maize silage, mycotoxin, contamination

1666W Effect of defoliation frequency around flowering time on the nutritive value of orchardgrass. N. Amaro[1], F. Bernardi Scheeren[2], M. Nauar[2], M. Fischer[2], M. Fernández-García[1], J. Dayuto[1], F. A. Lattanzi[2], F. Diaz*[3], and J. M. Arroyo[2], *[1]Instituto de Producción Animal de Veterinaria, Facultad de Veterinaria, Universidad de la Republica, Libertad, San José, Uruguay, [2]Instituto Nacional de Investigación Agropecuaria, Colonia, Uruguay, [3]Dellait Research Center, Brookings, SD.*

Determining the optimal defoliation frequency is essential to increase the productivity of pasture-based dairy systems. An experiment was carried out to study the effect of the defoliation regimen around flowering time on the evolution of chemical composition and nutritional value of orchardgrass. The experiment was conducted on a 4-year-old orchardgrass (*Dactylis glomerata* cv 'INIA Perseo') pasture at the experimental station "La Estanzuela" (INIA, Uruguay). Three defoliation regimens cut at 2 leaf-stage (L2), 4 leaf-stage (L4), or 2 pre-flowering and at 4 leaf-stage afterward (L2–4) were studied. Defoliation treatments were arranged in a completely randomized block design with 5 repetitions (blocks). The DM, NDF, CP and in vitro digestible NDF (NDFD; Ankom Technology Corp., Macedon, NY) production (kg of DM/ha) were determined for each defoliation event and treatment through the spring season (08/28/2019 to 11/25/2019). The evolution during the spring of each variable was studied through linear regression including the block as a random effect, the treatment as an independent categorical variable, and the days of biomass accumulation as a continuous independent variable. The slopes of the regressions were compared using the "ESTIMATE" statement of the MIXED procedure. There were 3 harvest events for L2 and L2–4 and 2 for L4 treatments. The DM accumulation rate did not show differences ($P > 0.1$) between treatments (71 kg DM/ha/d on average for the 3 treatments). The CP content of the pasture decreased (−0.250%/d average of 3 treatments; $P < 0.01$) and NDF content increased (0.191%/d average of 3 treatments; $P < 0.01$) along the spring without differences between treatments for both fractions. The DNDF decreased in all treatments ($P < 0.01$), being higher for L2–4 than for L2 or L4 (−0.402%/d vs. −0.199%/d and −0.272%/d, $P < 0.01$, respectively). Defoliation frequency, however, had no effect ($P > 0.1$) on total DNDF production (26.7 kg/ha/d, average for the 3 treatments). Defoliation frequency of an orchardgrass pasture in spring did not significantly modify its nutritional value.

Key Words: orchardgrass, defoliation regime, nutritive value

1667W Ruminal fermentation, *in vitro* digestibility, gas production parameters and chemical composition of some cool season grasses. A. Jafari*[1], H. Behrozpour[2], H. Fazaeli[3], and R. Mohammadi[4], *[1]Assist. Professor, Department of Animal Science, Yasouj University, Yasouj, Iran, [2]M.Sc. Student, Department of Animal Science, Yasouj University, Yasouj, Iran, [3]Professor, Animal Science Research Institute, Karaj, Iran, [4]Associate Professor in Branch for Northwest*