B-115 The seasonal changes in the quality characteristics of four grass species

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The quality of forage is seriously affected by the seasonal changes of climate. Therefore the present study was conducted to investigate the seasonal effect on the quality of *Dactylis glomerata, Phleum pratense, Lolium perenne* and *Festuca arundinacea.* 4 cultivars from each species were grown in a Randomized Complete Block Design with 4 replicates at the National Grassland Research Institute, Japan. The spring and summer harvests were taken and the samples were analysed for *in vitro* dry matter digestibility (IVDMD), crude protein (CP), acid detergent fibre (ADF), neutral detergent fibre (NDF), acid detergent lignin (ADL), hemicellulose and cellulose calculated by the difference and % dry matter (DM).

The IVDMD of summer harvest of all the cultivars except *P. pratense* cultivar was low compared to that of the spring harvest due to the effect of environment and ontogeny of the crop. Consistently low ADF, CP, NDF, hemicellulose and cellulose and high DM were observed in the summer harvest. All the species (exceot *P. pratense*) showed high amount of lignin in cell wall in the summer harvest. The lignin in cell walls seems to be the cause of low quality in the summer harvest. *D. glomerate* was found to be the worst affected by the summer climate.

P. pratense seems to be a promising species to produce high and stable quality pastures over seasons. Though a decline in the IVDMD was observed in the *L. perenne* during the summer, it also gives a higher IVDMD compared to other species.

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