

BAMBOO AS A YEAR-ROUND FORAGE SOURCE

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Abstract

Bamboo is a rapidly renewable, nutritionally stable, and in most cases, evergreen forage. Although only rivercane (*Arundinaria gigantea*) is native to North America, bamboo enthusiasts have imported hundreds of varieties adapted to a wide range of climates and growing zones. We have conducted macronutrient analysis on eleven temperate species collected across all seasons and have analyzed for dry matter, ash, acid-insoluble ash (AIA), crude protein (CP), crude fiber (CF), neutral detergent fiber (NDF), acid detergent fiber (ADF), lignin, crude lipid (ether extract, EE), and acid detergent fiber crude protein (ADF-CP) and gross energy (GE). We have detected no nutritionally significant seasonal changes in nutrient composition.

Bamboo leaves, averaging $14.26 \pm 1.75\%$ CP, $10.68 \pm 2.36\%$ EE, $71.29 \pm 3.08\%$ NDF, $34.21 \pm 2.25\%$ ADF, $8.21 \pm 3.22\%$ lignin and $10.99 \pm 2.03\%$ ash are similar in composition to many grass hays, although there is a greater amount of EE in bamboo leaves than in most grasses. Bamboo culms, at $1.71 \pm 1.21\%$ CP, $6.21 \pm 1.29\%$ EE, $90.08 \pm 2.76\%$ NDF, $62.43 \pm 6.45\%$ ADF, $15.75 \pm 1.35\%$ lignin, and $1.90 \pm 0.63\%$ EE are most similar chemically to the woody “twigs” of many browse species such as grapevines, mulberry and several willow species. Like many other grasses, bamboo contains appreciable quantities of silica and may contain secondary plant compounds of unknown toxicity. However, because of its evergreen nature, bamboo can be used a readily available browse species during winter months when other species are unavailable.