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Chemical composition, rumen degradability and crude protein fractionation of some commercial and improved cowpea (*Vigna unguiculata* L. Walp) haulm varieties

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Abstract

Seasonal chemical composition, *in sacco* organic matter (OM) and crude protein (CP) degradabilities and CP fractions of haulms of three improved (ITA2, ITA6 and ITA8) and three commercial (Oloyin, Peu and Sokoto) cowpea varieties harvested in wet and dry seasons were evaluated in a 2 × 2 factorial arrangement of treatments. Effective degradation of OM and CP was estimated at assumed outflow rates of 2 and 4% h^{-1}. Commercial haulms (all the other parts of the cowpea minus the grains) had greater ($P < 0{\cdot}001$) CP than improved varieties, whereas neutral detergent fibre and acid detergent fibre were greater ($P < 0{\cdot}001$) in improved vs. commercial haulms. Interactions between variety group (improved vs. commercial) and season were observed for CP ($P = 0{\cdot}002$), lignin ($P = 0{\cdot}003$) and hemicellulose ($P = 0{\cdot}030$) contents of the haulms. Similarly, a group × season interaction was observed for effective degradation of OM at an outflow rate of 2%. The proportion of substrate degraded in the samples harvested in the wet season was generally less ($P < 0{\cdot}001$) than in the dry season. Effective degradability values of OM at the assumed passage rates were greater ($P < 0{\cdot}001$) for improved vs. commercial cowpea haulms. Interactions between group and season were observed for all but one of the CP fractions. Seasonal differences in the quality of haulms showed that attention must be given to handling of haulms to minimize the amount of leaves lost during the wet season.

Keywords:

legume; protein value; ruminant production; season; substrate degradability; tropics