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Effects of supplementing local plants on rumen fermentation, microbial protein synthesis, digestibility and voluntary feed intake in beef cattle steers

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Introduction

In the tropics and subtropics, majority of feed resources for ruminant consist of leftovers from the grain harvest, grasses and foliages growing on roadsides or waste land. The grasses are generally with high fiber and low protein contents. This results in poor animal performance, especially in the dry season. However, alternative feed resources and crop-residues are locally available for used to increase livestock production in the tropical and subtropical areas. Cassava chip/pellets and dried leaves, baby corn stovers, kapok meal, cottonseed meal, broken rice and leuceana leaves are good example, while cereal crop, rice straw and urea-treated rice straw are excellent roughages for ruminants during the dry season. Efficient supplementation of locally mixed concentrate, grains or protein foliages, has been demonstrated to improve rumen ecology, dry matter intake and subsequently meat and milk quantity and quality (Wanapat, 1999). The extent to which tree foliage protein is degraded in, or escapes from the rumen is extremely important. If the tree foliage protein is totally degraded then it provides only ammonia and minerals for microbial growth (Leng, 1993). However, many tropical foliages or legumes contain secondary plant compounds, such as tannins and/or saponins, which may reduce their potential value as feeds, and there is an increasing awareness of the effects of these compounds on feed quality and animal production.