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CHEMICAL CHARACTERIZATION AND IN VITRO FERMENTATION OF HIGH TEMPERATURE DRIED ALFALFA AND GRASS HAY

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Grass hay is the traditional conserved forage for equines in the UK. However, much UK grass hay is of low nutritive value and despite increased intakes, many equines fed a hay-only diet are in negative energy balance. Thus, there is increasing interest in alternative conserved forages. High temperature dried (HT) alfalfa provides a source of high quality protein and energy from digestible fiber. It also contains valuable micronutrients such as calcium, vitamins A and E, and the B vitamins thiamin, riboflavin, biotin and folic acid. As gas is produced during the fermentation of feedstuffs, an automated gas production system developed for evaluating feeds for ruminants was employed to follow the fermentation kinetics of ground grass hay (H), high temperature dried chopped alfalfa (A), molassed chopped high temperature dried alfalfa (MA) and ground high temperature dried alfalfa (GA). These four feeds were incubated with an equine hindgut microbial inoculum, and the evolution of gas was monitored over 96 h. End point dry matter (DM) disappearance of feeds was related to total gas pool. The total volume of gas evolved was greatest from A > MA > GA > H. Initial rates of gas production were greatest from GA > A > H. In conclusion there is greater potential for maintaining equines on diets containing alfalfa than on hay alone. Furthermore, this technique appears to have considerable potential for evaluating forages for equines in vitro.

