

The effects of varying levels of *Nigella sativa* seed meal supplementation on nutrient digestibility and rumen fermentation characteristics in goats

ABSTRACT

The supplementations of various herbal feed additives with many nutritional properties have been widely investigated. The present study aims to investigate the effects of *Nigella sativa* seed meal (NSM) supplementation on nutrient digestibility and rumen fermentation characteristics of goats. In doing so, five mixed breed adult male goats were fed ad libitum with guinea grass hay (as basal diet), supplemented with NSM (DMI based on 1.5% of body weight) at 0% (NSM0), 0.8% (NSM8), 1.6% (NSM16) and 2.4% (NSM24). A mixture of Feral with Boer and Katjang breed of goats were used in this study. This study was carried out as a cross-over design of a 3-week cycle (2-weeks of adaptation and 1-week of experimental) and resumed after 1-week of washout period. It was revealed that there were no significant differences in nutrient digestibility of DM, OM, CF, DE, ADF, ADL and NDF, rumen pH, total VFA, individual VFA proportions and acetate: propionate ratio between control and NSM supplemented groups. Therefore, the results has proven that the addition of 0.8%, 1.6% and 2.4% NSM supplementation did not cause any adverse impact on feed digestibility and rumen fermentation characteristics of the goats. However, a larger number of replicates on the tolerance levels of NSM concentration in the dietary treatment of goats should be studied further.

Keyword: *Nigella sativa*; Goats; Nutrient digestibility; pH; Volatile fatty acids