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POTENTIAL OF USING INVASIVE *Petiveria alliacea* FOR FEEDING GOATS IN TOTAL MIXED RATIONS

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Petiveria alliacea is a perennial herb invasively spreading in Kandy and Mathale districts and has already become a troublesome weed in the farmlands. The present study assessed the biological value of tannins in *P. alliacea* and its potential to include in total mixed rations (TMR) for feeding goats. *Panicum maximum* was used as a control plant. Both *P. alliacea* and *P. maximum* at the boot stage were harvested from the Peradeniya University Experimental Station field in Dodangolla, dried, ground, and analyzed for proximate composition. Further, the *in vitro* organic matter digestibility (*in vitro* OMD), metabolizable energy (*in vitro* ME) and biological effect of tannins were determined using *in vitro* gas fermentation assay. Two isonitrogenous (16.4 and 16.8% CP) and isoenergic (7.44 and 7.25 ME MJ/kg DM) total mixed rations (TMR) were formulated using different levels of *P. alliacea*, *P. maximum* and coconut meal (0:46:54 and 35:33:32, respectively). Using Sannan male goats (13-month, 23.7 ± 1.19 kg), a feeding experiment consisting of two weeks of adaptation period followed by one week of collection period was conducted according to a Latin Square Design (n = 6). The crude protein (CP) content of *P. alliacea* (15.33 ± 0.32%) was greater ($p < 0.05$) compared to *P. maximum* (7.61 ± 0.11%). Despite the significant ($p < 0.05$) effect on the biological value of tannins, *P. alliacea* had significantly greater *in vitro* OMD and *in vitro* ME compared to *P. maximum* ($p < 0.05$). The use of *P. alliacea* in TMR formulation did not influence the feed intake, *in vivo* dry matter digestibility and *in vivo* OMD. *Petiveria alliacea* herb is a protein and energy-rich, more digestible forage than *P. maximum* and can be included at 35% in TMR formulation for feeding goats. The ration with *P. alliacea* can be cheaper as it replaced 22% coconut meal (54 vs 32%) of the ration.

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