EFFECTS OF DIFFERENT LEVELS OF WET SOYA WASTE SUPPLEMENTATION ON INTAKE AND GROWTH PERFORMANCE OF GOATS FED NAPIER GRASS

Wan Khadijah, W.E.¹*, M.M. Rahman¹, T. Nakagawa², R.B. Abdullah¹ and R. Akashi²

¹Institute of Biological Sciences, Faculty of Science, University of Malaya, Kuala Lumpur, Malaysia; ²Frontier Science Research Centre, University of Miyazaki, Miyazaki Shi Japan.
*E-mail: wkhadi@um.edu.my

There are prospects for using novel feeds from various sources to provide alternative sources of energy and protein, such as soya waste. Soya waste is one of industrial by-products, which is residue when tofu, soymilk and soya juice are made from soybean. Farmers have an interest to use soya waste as goat feed for long term feeding, since its nutritive value is superior to other feeds (O’Toole, 1999). There is little information available on the benefits of soya waste supplementation on goats as this species can be more selective eating behaviour than other ruminants. Research is needed to use the maximum amount of soya waste so that as much soya waste as possible is consumed with minimal forages and other concentrates. This study was conducted to determine the effects of different levels of soya waste supplementation on intake and growth of goats.

Twenty female crossbred (Boer × native) goats at 9-12 months of age were used. Goats were allotted into four dietary treatments with five goats in each. All animals were offered Napier grass ad libitum. Animals also received soya waste at the rate of 0.5, 1.0, 2.0% of body weight (BW)/d (DM basis) and ad libitum for Groups A, B, C and D, respectively. Animals in Group D, feed intake (soya waste and Napier grass 363 and 116 g/d, respectively) and BW change (0 g/d) were recorded for only 14 days, which was then discarded due to symptoms of diarrhoea in experimental goats. Feeding trial was continued for Groups A, B and C from Oct. 2012 until Feb. 2013. Soya waste was supplied by supplier at every 7-d interval, stored in containers and kept airtight. The composition of soya waste and Napier grass is shown in Table 1. Feed intake was measured by examining feed offered and refused. The BW was recorded every fifteen days by weighing balance. The digestibility trial was carried out for 7 days using the total faeces collection method at the end of feeding trial. Data related to dry matter, crude protein, ash and neutral detergent fibre contents were measured and all data were analysed using the SPSS package.

Grass intake reduced with the increased dietary level of soya waste. However, total DM and OM intakes were not affected by the treatment groups (Table 2). In steer, dietary soya waste 25-35% in total mixed ration diet showed higher DM intake than control (Kim et al., 2012). The CP intake during digestion trial was higher for Group C in comparison to Group A and Group B. The NDF intake of goats decreased with the increased dietary level of soya waste and it was lower in Group C compared to Group A. The DM digestibility increased with the increased dietary level of soya waste and it was higher in Group C compared to Group A and Group B. Average daily BW gain tended to be higher with the increased dietary level (up to 2.0% DM of BW) of soya waste and it was differed among the groups (Table 3). Feed conversion for the Group B and Group C were superior to the Group A. Increased dietary soya waste resulted in a significant increase in DM digestibility and this is also one of the reasons why dietary soya waste increased BW. Harjanti et al. (2012) reported that commercial pellet could