

UTILIZATION OF DISTILLERY WASTE AS AN INGREDIENT OF LACTATING CATTLE FEED

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Toddy Spent Wash (TSW) is the waste generated during the distillation of alcohol from toddy. The percentages of dissolved organic and inorganic nutrients are relatively higher in TSW. While beer pulp, a by-product of brewing grains is already used as a cattle feed ingredient in Sri Lanka, there is currently no documented commercial usage for TSW. This preliminary study evaluated the possibility of utilizing TSW as a cattle feed ingredient. Two total mixed rations (TMR) were prepared, incorporating TSW (TMRt) and beer pulp (TMRb). Four dairy cows were randomly assigned to TMRt and TMRb (two cows for each TMR) in a randomized complete block design, and the production performances of lactating cows fed with both TMRs were assessed by a feeding trial. The feed intake, milk yield, and milk composition (solid non-fat, protein, density, lactose and fat) were collected daily. The crude protein (CP) content of TMRb ($15.6 \pm 0.11\%$) was significantly ($p < 0.05$) higher than that of TMRt ($11.7 \pm 0.11\%$), which might be due to high CP content of beer pulp ($50.0 \pm 0.52\%$) compared to TSW ($29.3 \pm 0.52\%$). The other nutrients, however, were similar ($p > 0.05$) for both TMRs. In addition, milk yield (2.4 ± 0.06 L) for both rations, feed intake (14.4 ± 0.20 kg cow⁻¹) and milk composition were also similar ($p > 0.05$) between TMRb and TMRt fed cows. Interestingly, significantly ($p < 0.05$) higher milk fat content ($3.92 \pm 0.15\%$) was recorded for TMRt-fed cows compared to TMRb-fed cows (3.06 ± 0.15). The results of this feeding trial showed that the TSW can be effectively incorporated into a TMR for feeding lactating cows without compromising the production performances. The use of TSW as a feed supplementary can minimize the environmental and health hazards for humans and animals due to improper disposal. Further studies are recommended prior to commercial use of TSW.

Keywords: Beer pulp, Feed intake, Milk yield, Toddy spent wash, Total mixed ration