

## Utilization of Torula Yeast (*Zymomonas mobilis*) as Main/Reciprocal for Degradation of Municipal Organic Waste as Feed for Goats

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**Abstract :** The study was carried out to investigate the performance of Red Sokoto goats fed Municipal Organic Wastes (MOW) subjected to two methods of in vivo degradation by Torula Yeast and *Zymomonas mobilis*. Two combination, Torula Yeast + *Zymomonas mobilis* (main degradation), and *Zymomonas mobilis* + Torula Yeast (Reciprocal degradation) were used to degrade MOW. Eighteen Red Sokoto goats of both sexes (9 males and 9 females) of ages between 6-8 were used for the study. The goats were randomly assigned into 3 treatment groups A, B and C respectively with 6 goats per treatment. The experiment was laid in a Completely Randomized Design and replicated 3 times. Treatment A groups were fed 30% Undegraded MOW base diet +concentrate mixture, Treatment B groups were fed 30% Main degraded MOW base diet +concentrate mixture, Treatment C groups were fed 30% Reciprocal degraded MOW base diet +concentrate mixture. The result of the daily weight gain was significantly ( $P<0.05$ ) better than on the other Treatments. There was significant improvement ( $P<0.05$ ) on the daily feed consumption in Treatment B than on the Treatments A and C. The feed conversion ratio revealed no significant ( $P>0.05$ ) differences among the treatment groups but much better in the treatment B and C, the cost of feed consumed was much higher ( $P>0.05$ ) in Treatment B followed by Treatment C, while Treatment A had the lowest. The cost/ kg weight gain that was recorded in Treatment A was better ( $P<0.05$ ) than the Treatment B, followed by Treatment C, while the cost of production was high ( $P<0.05$ ) in Treatment B than in other treatments. The gross profit was observed best ( $P<0.05$ ) on the Treatment B, followed by Treatment C while Treatment A had the lowest. The net profit as noted in this study was much better ( $P<0.05$ ) in Treatment B, and Treatment C, while the least was observed in Treatment A, where the return on investment was high in Treatments B and C, while Treatment A had the lowest.

**Keywords :** reciprocal, torula yeast, *Zymomonas mobilis*, organic waste

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