A NOTE ON THE USE OF CATTLE FAECES AND BIOGAS DIGESTER EFFLUENT IN BROILER RATIONS

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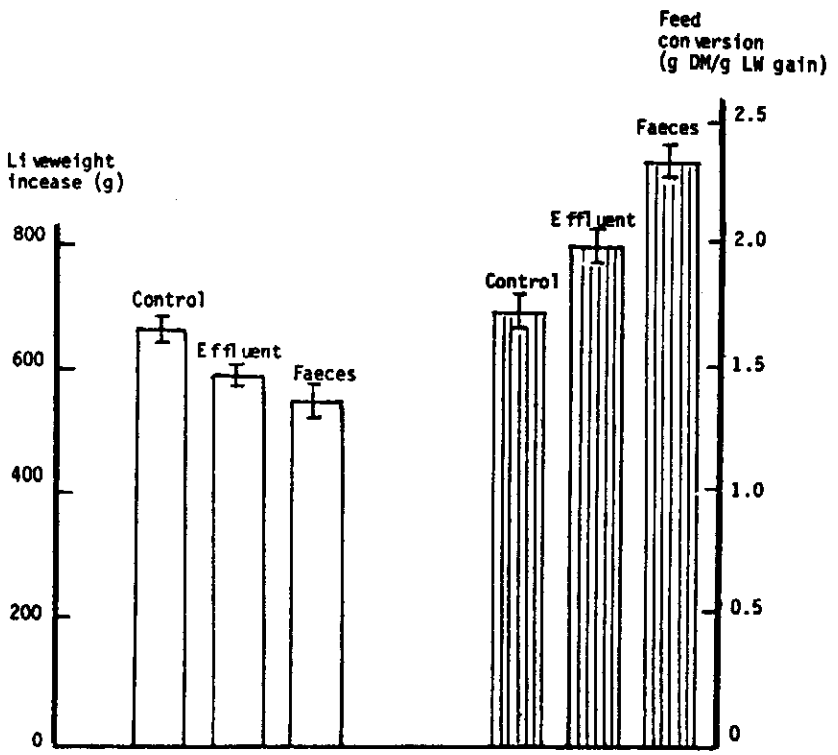
Thirty day-old broiler chicks were fed a conventional cereal-based ration alone or substituted (10% DM basis) with cattle faeces or the effluent from a plug-flow (40 day retention) biogas digester charged with the same faeces. Both additives depressed performance but the effect was significantly less pronounced for the effluent than the fresh faeces. (Key words: broilers, recycling, cattle faeces, bio-digester effluent)

In view of the growing interest in the recycling of livestock waste in order to reduce pollution, save energy and to produce animal feed, a small trial was set up to investigate the potential role of biogas digester effluent as an ingredient for poultry rations. Thirty day-old broiler chicks, housed in groups of five in wire cages were allocated to 3 treatments: a) a sorghum grain, soybean meal, meat meal basal diet (control); b) the basal diet with 10% (DM basis) replacement of the sorghum grain by cattle faeces; c) the basal diet with 10% biogas digester effluent. The faeces came from cattle fed a diet of 50% concentrates, 50% elephant grass (*Pennisetum purpureum*). The biogas effluent came from a biogas digester charged with the same faeces. The digester consisted of a plastic PVC canopy, suspended in an unlined trench in the ground (5 m long x 0.8 m wide x 1.0 m deep). It was operated on the plug-flow principle with a liquid retention time of 40 d and 5% faeces (DM) in the daily input of 100 litres. The faeces and effluent were sun-dried and ground (N in DM = 1.5% for both) and substituted for sorghum in the basal diet.

The mean values for liveweight gain and DM conversion from 1 to 29 d of age are shown in the Figure. There were highly significant differences between treatments in the order of superiority; basal diet > effluent > fresh faeces.



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