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| **Title** | CULTURE AND QUALITY ASSESSMENT OF AZOLLA MICROPHYLLA FOR PIG FEED INGREDIENTS |
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## ABSTRACT

*Azolla* spp. is an aquatic fern found in natural water sources which can be used as animal feed ingredient due to its nutritional values and rapid growth in tropical environment. In order to assess the viability of azolla for use as an alternative feed source this study was divided into two experiments. The first experiment was to examine yield and nutrient compositions of *A. microphylla* using Completely Randomized Design (CRD). Azolla was cultured in the cement container of 0.32 square meters and treated with seven treatments of different ratio of soil and organic fertilizer (w:w) which were i) cow dung (1:0.5), ii) pig feces (1:0.5), iii) biogas dry sludge (1:0.5), iv) cow dung (1:1), v) pig feces (1:1), vi) biogas dry sludge (1:1) and vii) no fertilizer addition as a control group (1:0) The second experiment was nutrient digestibility study of azolla compared with leucaena leaves in 6 growing pigs using change-over designs. The results of first experiment showed that azolla culture using pig feces (1:1) gave the highest yield ($P<0.05$) of 688.09 g/pond and also contained the highest amount of crude protein (20.50%) and crude fibre (15.26%) contents. Highest energy content (3671 kcal/kg) ($P<0.05$) of azolla cultured using pig feces (1:0.5). However, there were no significant ($P>0.05$) in the amount of ether extract, ash, calcium and phosphorus among treatments groups. For nutrient digestibility studied in growing pigs in the second experiment, protein digestibility of azolla was significant ($P<0.05$) higher than in leucana leaves

(70.88 % vs 64.26%). On the other hand, ether extract digestibility of azolla was significantly (P<0.05) lower than in leucaena leaves (83.39% vs 86.68%). However, there were no significant (P>0.05) difference of dry matter and crude fibre digestibilities, digestible and metabolizable energy between azolla and leucaena leaves. In conclusion, azolla culture for the best yield and nutrient contents could be from using soil and pig feces as fertilizer at the ratio of 1:1 Digestibility in growing pigs of dry matter, crude protein, ether extract and fibre in azolla were 75.31, 70.88, 57.09 and 83.39 %, respectively. Digestible energy and metabolizable energy of azolla in growing pigs were 2,371 and 2,253 kcal/kg, respectively.