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Environmental Performance of Backyard Poultry Production System in Sri Lanka

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Abstract

Livestock production systems exert severe negative impacts on environment. In the light of projected increase in livestock product consumption, production systems that exert lower environmental impacts are to be identified and promoted. Despite the recent popularity of intensive poultry production systems, backyard poultry production systems (BY) still play an important role in socio-economic fabric of rural communities. However, environmental performance of BY are less documented. Objective of this study was to ascertain environmental performance of BY in Sri Lanka. Two hundred and ninety five backyard poultry farms in ten districts of six provinces were selected using three stage random sampling technique (provinces, districts and farms). Production performance and information related to spent litter disposal practices, the level of dust emission, presence of mal-odour and phenotypical characters of the flocks were collected. Based on an emission factor reported in literature, ammonia emission was estimated to as high as 21 g of NH₃ N per dozen of eggs. Emission rate was significantly higher for those who considered backyard poultry keeping a hobby than those who considered it an additional income source or the main income source. Emission rate was significantly lower when purchased supplemental feeds were given than when not (18 and 22 g NH₃ N/dozen egg, respectively). Ammonia smell was felt just outside the pens of the 60% of the farms. Risk of polluting water resources was found to be high in 28% of farms which used to dump spent litter indiscriminately. Dust emission was judged at a problematic level in 46% of the poultry houses, among them 73% considered backyard poultry an additional income source. Flocks in 94% farms were comprised of genetically non-descriptive birds of numerous crosses. NH₃ smell was felt at 12% the houses which practice backyard poultry production. However, only a 50% of them admitted that they normally sense ammonia smell at their houses. BY was identified as an important mean of conserving livestock biodiversity. Environmental performance parameters such as ammonia emission, risk of polluting water resources and dust emission of BY were concluded to be weak.

Keywords: Ammonia, Backyard, Dust, Environment, Poultry