

Poultry Litter Generation, its Impacts and Management Strategies in Sri Lanka – A Review

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The poultry sector has been increasing at more than 5% per annum in last 3 decades to complete the increasing demand of safer and high quality meat and eggs. This development has been go along with structural changes within the sector as industrial farming establishments, the intensification and concentration of poultry operations. The poultry sector contributed to 0.35% of national GDP which is more than 50% of total livestock sector contribution in Sri Lanka. The per capita meat chicken availability in Sri Lanka was 10 kg/year in 2017. Kurunagala, Puttalm and Gampaha districts are accounted as the highest poultry farm located districts in the country. Concentration of large amount of manure is accounted as a major environmental issue which emerged with poor manure-management practices such as burning, direct usage as a fertilizer, *etc.* Substantial amounts of nutrients such as N, P and excreted substances such as hormones, antibiotics, pathogens and heavy metals are contained in poultry manure which are introduced through feed. The limited access of land to dispose manure increases the concentration of manure at one place and results soil and water pollution. Direct application of poultry litter into crop fields releases large amount of N and some other nutrients together with pathogens and other microorganisms into the environment. The substances which are contained in the litter are broken down, immobilized or transformed to the water, soil and atmosphere. Different forms of N such as ammonia (NH₃), dinitrogen (N₂), nitrous oxide (N₂O) and nitrate (NO₃⁻) are emitted by manure and increase the N footprint. The surface application of poultry litter increases greenhouse gas emission and results global environmental issues such as global warming, climate change, eco system degradation, *etc.* Moreover, manure consists considerable amount of toxic metals such as arsenic, copper and zinc. Excessive amount of elements harm to crops and adversely affect on animals due to bioaccumulation. Scientists are focusing on efficient technologies to produce bio fertilizer from poultry litter to reduce the negative consequences which are caused by inappropriate poultry litter disposal methods.

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