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A comparison of the organic fertilizer value of three types of spent broiler litters

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Spent poultry litter is a popular organic fertilizer used for many field crops. Even though the suitability of refused tea (RT) as an alternative litter material to paddy husk (PH); has been established, little is known about the organic fertilizer value of RT based spent poultry litter. Objective of this study was to compare the organic fertilizer values of spent litters based on PH, RT and a 1:1 mixture of PH and RT. Broilers were reared on either on PH, RT or PH:RT (1:1) litters from day 10-42. All three types of spent broiler litters were heaped for three weeks. Radish (*Raphanus sativus* L.) was used as the test crop. In a completely randomized block design experiment, three litters were applied to each treatment unit at a rate 5 tons/ha. The control group received recommended inorganic fertilizer levels. Root and shoot yields were determined at the end of the growing season on day 45. Soil samples were analyzed for bulk density. None of the yield parameters such as fresh shoot yield, fresh root yield, shoot:root ratio and total biomass production of the radish which received spent broiler litters as an organic fertilizer was not significantly different ($P>0.05$) from those of inorganic fertilizer received radish. Also, the type of litters also had no significant effects on yield parameters. Bulk density of the soil received either PH or RT based litters were significantly lower than that received inorganic fertilizer or the spent litter based on PH and RT. It was concluded that spent broiler litters based on PH and RT could be used as an organic fertilizer for radish and improve the soil physical properties.

Keywords: spent broiler litters, radish, radish, paddy husk, refused tea