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**A comparison of the behavior of free-range laying hens in an agro-forestry system with commercially reared laying hens**

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Despite the popularity of intensive commercial systems (CR) of management, free ranged back yard system (FR) of poultry management still plays an important role in rural agriculture. The backyard poultry are normally free ranged and feed mainly on scavenging and, to a certain extent on household wastes. Free range system is gaining popularity as a mean of minimizing the behavioural restrictions imposed by intensive commercial management systems. Objective of this study was to compare the behavior of free-ranged laying hens in a backyard system with intensively reared commercial laying hens. Five laying chicken were randomly selected from each type of flock. The study was conducted in two consecutive days. Behaviour of birds was recorded between 0900-1200h by direct live focal observation on 18 mutually exclusive behaviours by using an ethogram. Behaviour was recorded continuously at 15 seconds intervals for 3 hrs. In FR, the most prominent activity was eating (43%) whereas in CR it was standing (53%). A notable intake of forages was observed in FR system. FR birds spent significantly more time on walking (36%), scratching the floor (18%), running (3%), compared to the CR birds. CR birds spent significantly more time on standing (53%) and drinking (7%). CR birds spent 17% of their time budget on litter eating. The time spent on behaviors such as lying, laying, eating, head movements, wing flapping, bird interactions, jumping, dust bathing, body shaking, vocalization and feather pecking were not affected by the rearing system. The frequencies of eating, scratching floor and running were significantly higher in FR where as frequency of drinking was higher in CR. It was concluded that compared to intensive commercial system, free range rearing system of poultry promotes active behaviors of birds. Further studies are suggested to evaluate the welfare implications of restricted behaviors in commercial poultry rearing systems.

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