The Use of Chickens (Gallus gallus domesticus) as Bio-recyclers of Household Organic Waste

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One-third of food produced for human consumption is wasted. This equates to approximately 1.3 billion tonnes annually, most of which becomes landfill. This study examines one way consumers can take control of this wastage. Backyard chickens turn wasted food into a valuable food supply chain resource. This project aims to determine how much waste a chicken can process and explores the subsequent benefits to society and the environment. A small population of domestic chickens was divided into two groups. One group was confined in cages and fed commercial chicken feed, then household food scraps. The other group was fed the same diet but allowed to forage a larger area. This group then foraged on accumulated waste. Manure samples were collected for nutrient content analysis. Soil samples were compared over time to determine whether foraging improved the friability and nutrient enrichment of soil. Average household food waste of 500kg per year could be processed by three foraging chickens, reducing landfill greenhouse gases by 2.6kg CO_2 per day. The addition of eggs to the food supply chain would eliminate the economic cost and environmental footprint of commercially produced eggs. Over time, the process of chickens foraging transformed a low nutrient, low pH soil into nutrient-rich soil. Backyard chickens connect consumers to their food source, whilst turning waste into a valuable resource. With rising food prices and concerns over future food security, backyard chickens can recycle, replace and re-educate consumers about food waste, empowering a movement toward sustainability.

Awards Won:

Third Award of $1,000