

Effects of geese feeding under the forestlands on environmental ecology, and soil properties ⁽¹⁾

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Abstract

The aim of study was to investigate the effects of geese feeding under the forestlands for environmental ecology, soil properties and crude earnings. Our study was taken place in an artificial forest where a total of two hundred and fifty white Roman geese were grazed and located at Guangfu township, Hualien county. The results showed that there has no obvious impact on birds, mammals, amphibians and reptiles for geese feeding under the forestlands in environmental ecology, but the vegetation coverage under the forest is significantly reduced, from 100% to 50%, and the vegetation coverage reduced to 25% after the end of geese feeding. The β -diversity index of the geese feeding forestland decreased gradually from 0.879 to 0.831, and the degree of decrease was -0.048, which indicated that geese feeding under the forest would cause the decline of plant biodiversity. In soil properties, the pH, total nitrogen, K, Ca and Cu of soil were significantly different ($P < 0.001$), indicating that the geese feeding under the forestlands can increase soil fertility, thereby becoming part of the nutrient cycle on the farm. Whereas there were no significant difference in, electrical conductivity, P, Zn, and Mg. Average body weight of geese is 5.40 kg and the feed conversion rate is 3.24 at 12 weeks of age. The crude earnings are 160 dollars per goose. In conclusion, the geese feeding under the forestlands in summer, it should be properly planned for their space to avoid environmental and ecological impacts.

Key words: Environmental ecology, Soil properties, Geese feeding under the forestlands.

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