

**SESSION VII: SUSTAINABLE AGRICULTURAL PRACTICES**

**EFFECT OF BUFFALO GRAZING ON PLANT SPECIES  
DIVERSITY IN A COCONUT-PASTURE-CATTLE INTEGRATED  
SYSTEM**

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The effects of long and short-term buffalo grazing on plant species diversity under coconut were examined. 18 Murrah and Surthi pure and crossbred buffaloes were allowed to graze 3 hours a month for 6 months (short term grazing). Herbage from an adjoining coconut plantation was taken as the control. Quadrate sampling was adopted to analyze herbage up to species level and four random samples were taken at each event.

The Shannon diversity Index (H), species richness and evenness were calculated for each treatment.

Results showed that the diversity index and evenness in the undisturbed habitat (ungrazed coconut plantation) were 2.176 and 0.6679 respectively and were much higher than highly disturbed habitat (grazed plantation) where the same values were 0.4.747 and 0.2160. The short term grazing effect showed an intermediate results. In the ungrazed site there were greater number of plant species and more equitable the individuals in the community were distributed. Long term grazed coconut plantation had only 9 species and over 80% of the individuals belong to one species; Carpet grass (*Axonopus affinis*) the most common species in a grazing land. Grazing pressure was favorable to dominate prostrate type plants. It was shown that grazing pressure whether short term or long term changed the abundance of plant species.

It is concluded that different levels of disturbance have different effects on plant species diversity.