

B-53: Use of shrimp wastes (*Penaeus monodon*) in improving the quality of grass (*Brachiaria brizantha*) silage

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Feeding value of tropical grasses are poor and has insufficient quantities of energy and nutrients for ruminants. *Brachiaria brizantha* is a selected grass which is successfully growing under coconut. However, quality of this grass is poor to make silage. Therefore addition of nutrients such as shrimp waste. coconut poonac may be required when making silage. Shrimp waste is a cheap source of protein and available in the coconut growing areas.

Objectives of the study were to investigate the feasibility of ensiling shrimp waste with *Brachiaria brizantha* grass and to determine the optimum level of shrimp head to be incorporated.

Brachiaria brizantha harvested at 3 months of age, about 7.5 cm above the ground level was used. Coconut poonac was obtained from the local market and shrimp heads (fresh form) from a commercial processing centre. According to the chemical analysis, shrimp heads consisted of 29% dry matter, 43% crude protein, 11% crude fat and 21% ash.

Harvested chopped grass, ground coconut poonac and fresh shrimp heads were mixed in different levels as in the table.

<i>Treatment</i>	<i>Grass</i>	<i>Shrimp heads</i>	<i>Poonac</i>
T1	95	0	5
T2	90	5	5
T3	85	10	5
T4	80	15	5
T5	75	20	5

Ingredients were well mixed and filled into polyethylene bags with double layers. Silage samples were analysed for pH and volatile fatty acids.

Data was subjected to analysis of variance (ANOVA) using statistical analytical systems (SAS, 1990). Means were separated using the Duncan's Multiple Range Test.

Physical characters of all silage samples were satisfactory and gave a pleasant woodapple aroma, except those having shrimp heads at over 15%.

Increasing the level of shrimp heads from, T1 to T5 gradually increased the pH value of silage. It may be associated with the breakdown of proteins to amino acids and ammonia in treatment with high levels of proteins.

Lactic acid and Total VFA content of the ensiled mixtures increased with increase in shrimp heads. Lactic acid content of the ensiled mixtures increased from 226 to 682%, VFA content from 6.63 to 11.04% with the increase in shrimp heads. According to the literature, increase in level of soluble carbohydrates will increase the lactic acid and total acid production in ensiled material. In the present study soluble carbohydrate content of T1 to T5 may have increased with the reduction of *B. brizantha* and addition material and thereby may have increase the acid production of silage.

Cost of production of 1 kg of silage under laboratory conditions was Rs.12/41. However silage making at coastal areas is more economical, compared to silage making in mid country using shrimp heads as an additive.

According to the results, addition of shrimp wastes had improved the fermentation characteristics of silage. Addition of 5-15% of shrimp waste may be suitable in making silage. However, animal feeding trials have to be conducted using the prepared silages before recommending to farmers.

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