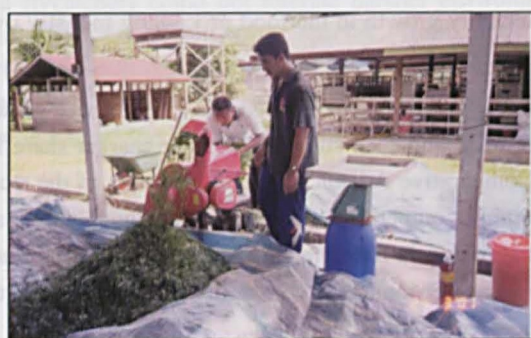


## Effects of Legume Inclusion in Grass-Based Silages

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Fast growing fodder grasses such as elephant grass (*Pennisetum purpureum*) can be ensiled when cut after about 5-6 weeks of regrowth but often the silages based solely on grass have low protein and soluble sugar content which makes their quality rather poor. This study was aimed at determining whether addition of gliricidia and leucaena foliage can improve the quality of silages based on King grass and Dwarf Napier. In experiment I the ratio of legume to grass was varied at levels of 0, 20, 30 and 40 percent by weight. Subsequently in experiment II the proportion of legumes was fixed at 30 percent as this was shown to be the optimum ratio of legume to grass. In the second experiment, treatments comprised of grass silage with the addition of urea, urea and molasses in addition to legume-grass silages. This was to evaluate the effects of legume inclusion compared with urea/molasses as additives.



Chopping



Dwarfnapier

The results show that for both King grass and Dwarf Napier, addition of legumes had some beneficial effects on the quality of silage produced. Inclusion of legumes resulted in reduced pH, especially for Dwarf Napier where pH remained at a high of 5.53 without legumes but was reduced to 4.42 and 4.66 after inclusion of 30% gliricidia and leucaena, respectively. Soluble sugar levels also increased for King grass when legumes were incorporated. Crude protein increased with addition of legumes. King grass silage without legumes had crude protein level of 5.33% but this increased to 9.08% when leucaena was incorporated. Dwarf Napier silage mixed with 30% leucaena had a protein level of 12.01%. The second experiment substantiated the benefits of legume inclusion shown in experiment I. The quality of legume-grass silage was better than pure grass silages with addition of urea or molasses.

### Reader Enquiry

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