Intake and Digestibility of Elephant Grass Ensiled with Cassava Peels by Red Sokoto Goats

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ABSTRACT: Elephant grass (*Pennisetum purpureum*) was ensiled with cassava peel at 0, 10, 30 and 50% inclusion levels (wet basis) for Red Sokoto goats. Physical properties of silage, intake and digestibility were determined. The appearance, smell and texture of the composite silage improved with increasing level of cassava peel in the mixture. The pH of the silage ranged from 3.75 - 4.70 and reduced with higher inclusion of cassava peel in the mixture. Dry matter (DM) intake of the goats increased from 2.55 – 3.09% of body weight as proportion of cassava peel in the silage increased while DM digestibility increased from 54.7 – 68.0%. These results show that addition of cassava peel to elephant grass improved the physical attributes of the silage and its nutritive value for goats.

INTRODUCTION

- Forage scarcity during the dry season leads to low productivity of goats in Nigeria
- Elephant grass silage has potential to bridge the gap in forage supply
- Addition of readily fermentable carbohydrates improves quality of grass silage
- Cassava peel is a cheap source fermentable carbohydrate in Nigeria
- This study aimed at evaluating physical properties of silage, intake and digestibility of elephant grass ensiled with cassava peel by goats

RESULTS

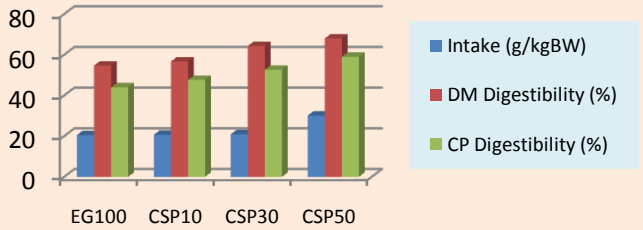

Fig. 1 Intake and digestibility of elephant grass ensiled with cassava peel

MATERIALS AND METHODS

Experimental treatments are as follows:

- Elephant grass alone (EG100)
- Elephant grass + 10% cassava peel (CSP10)
- Elephant grass + 30% cassava peel (CSP30)
- Elephant grass + 50% cassava peel (CSP50)

✓ Elephant grass (12 weeks old) was chopped and mixed with chopped cassava peel.

✓ Silage was made inside 4L mini-silos for laboratory analyses and 120L plastic drums for animal study.

✓ Twelve Red Sokoto goats were used for intake and digestibility study

✓ Feeds and faeces were analysed using AOAC 1995 procedures

✓ Data were analysed by ANOVA and Duncan's multiple range tests using SAS (1995) procedures

RESULTS

- Colour of silage changed from pale to light green with inclusion of cassava peel in the mixture
- Smell and texture of silage improved with addition of cassava peel
- pH of silage (3.75 – 4.70) reduced as proportion of cassava peel in the silage increased
- Dry matter content (18.4 – 30.0%) and nitrogen free extract (51.1 – 56.3%) of silage increased as proportion of cassava peel in the mixture increased while crude protein (4.5 – 5.5%) and crude fibre fraction (29.5 – 35.0%) reduced
- Intake of goats (2.55 – 3.09% of body weight) increased with increasing level of cassava peel in the composite silage
- Dry matter digestibility of silage increased from 54.66 – 68.00% as proportion of cassava peel in the mixture increased.

CONCLUSION: Mixing cassava peel with elephant grass had beneficial effects on silage properties, intake and digestibility of the ensiled mixture. Where cassava peel is readily available, it is recommended that it forms at least 30% of silage made from tropical grasses to improve productivity of ruminants during the dry season