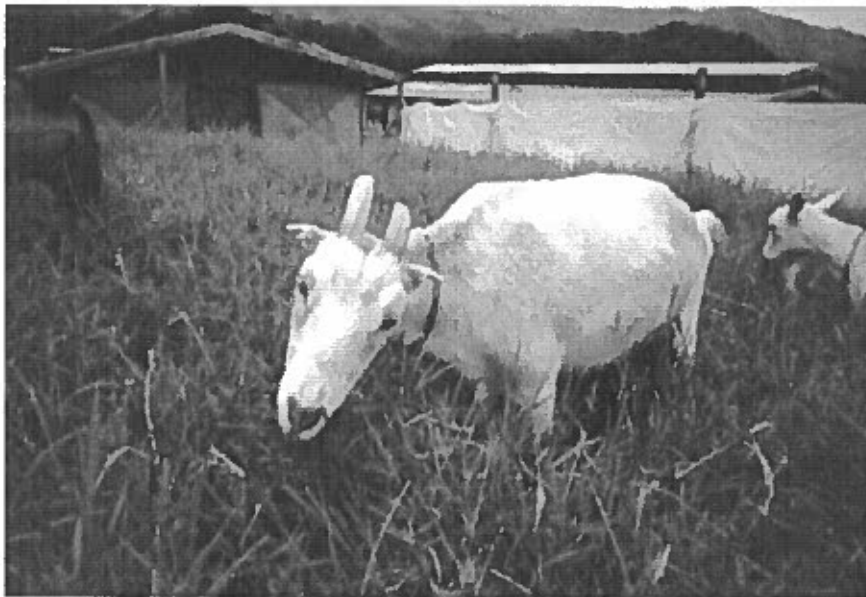


**The Nutritional and Behavioural
Effect of the Supplementation of the
Tropical Forage Cratylia, in the Diet
of Goats.**

Abigail Jackson & Katie Powell



Appendix

Three months were spent in Costa Rica and within this time the experimental recordings lasted for forty days. Below is a typical days work when recording.

| | |
|-------------|---|
| 4.30 am | Behavioural recording of two goats from each group |
| 5.00-6.30 | Hand milking all goats |
| 6.30-7.00 | Cleaning of milking parlour |
| 7.00-11.00 | Goats were separated into their groups and placed in separate paddocks to graze |
| 7.30 | Breakfast |
| 7.45-9.30 | Harvesting Cratylia and taking milk to cheese factory |
| 9.30 | Number of bites in three minutes recorded for 2 goats from each group |
| 10.00 | Chopping of Cratylia |
| 10.30 | Number of bites in three minutes recorded for 2 goats from each group |
| 11.00 | Goats in to pens |
| 11.30 | Transport and weighing of Cratylia |
| 12.00 pm | Goats fed Cratylia |
| 12.30 | Lunch |
| 13.10 | Behavioural recording of two goats from each group |
| 14.00-16.00 | Laboratory work |
| 16.30 | Behavioural recording of two goats from each group |
| 17.00 | Dinner |
| 19.30 | Behavioural recording of two goats from each group |
| 22.30 | Behavioural recording of two goats from each group |
| 23.00-1.30 | Sleeping |
| 1.30 am | Behavioural recording of two goats from each group |
| 2.00-4.30 | Sleeping |

Adequacy of Financial Support

The price of accommodation was £12 per night each. This was more than expected and thus all funding received was necessary and extremely appreciated.

The proposed study aimed to research the effect of supplementation of Napier grass on the intake of grazed grass by cattle at the Central American School for Animal Husbandry, Atenas, Costa Rica.

There were insufficient supplies of Napier grass to feed the cattle in the proposed study. However, a project was available to research the nutrition and behaviour of goats. The project aimed to answer unknown fundamental questions, as no previous studies of this nature had been investigated. This would not only relate to our studies but also provide some interesting results and subsequently aid farmers.

Thus, the study undertaken was to research the effect of *Cratylia argentea* (a tropical forage) supplementation on the intake of grazed grass by goats. A few agronomic trials have been carried out on *Cratylia*, with very few experiments involving animals, and not a single experiment involving goats. *Cratylia* is a fast growing forage, with a high nutritive value and is thought to be a valuable new dietary supplement.

Methods

The project involved taking three different types of measurements from the following: the animal, supplement and pasture.

Animal Measurements

Every morning the goats were milked by hand and the amount of milk produced from each goat was weighed and recorded. At the end of each treatment period (every 10 days) a milk sample from each goat was sent to a laboratory in San Jose for analysis. After milking, the goats went out to graze on star grass, but this was restricted to a period of four hours per day. During this time measurements of bite rate were recorded as often as possible to estimate intake. After grazing the goats were placed in separate pens where they were fed different amounts of the chopped forage *Cratylia*. Every morning the refusal of this material was weighed. For five days within the recording period, (every 3 hours, 24 hours a day), two goats from each group were studied for three minutes each. The time each goat spent idle, ruminating or eating (number of chews and bouts were counted during rumination) was recorded.

Supplement measurements

Every morning fresh *Cratylia* was harvested using a machete, chopped in a machine, weighed and fed to the goats according to treatment. Samples of *Cratylia* (offered and refused material) were dried in the laboratory oven at 60°C, ground and will be sent to Edinburgh for analysis.

Pasture Measurements

There were four separate paddocks used in the trial, all containing star grass. Every five days four quadrat samples per paddock were taken to estimate the dry matter of the star grass. At the same time separation of the material into dead, stem and leaf was carried out and also estimated for dry matter. Random samples were plucked from each paddock to simulate a normal grazing nutrient representation.

These samples were ground down and will be sent to Edinburgh for chemical analysis.

Results

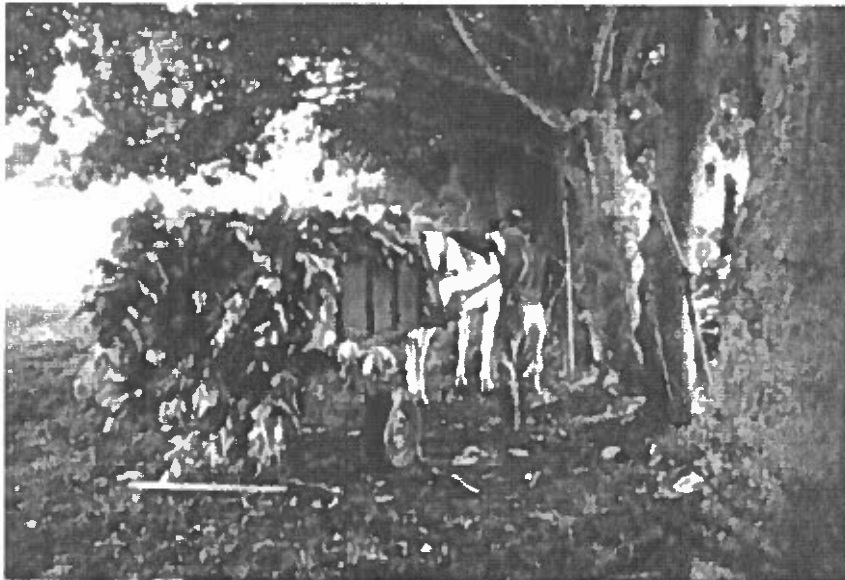
A huge amount of data was obtained from this study. Due to the size and complexity of this data set, a statistical software package will be used to analyse the information. As yet it has not been possible to begin analysing the data set, as it is not complete. The information obtained has been typed into the excel package and forwarded to our supervisor.

A thorough analysis both statistically and chemically will begin in the spring term.

Conclusion

The objective of this study was completed. However, conclusions regarding the data cannot be made until full analysis is carried out.

Difficulties encountered included language barriers, use of machinery and the amount of work expected but most problems were over come relatively easily.



Acknowledgements

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We would also like to thank our supervisors in Edinburgh, Dr Neil Jessop and Dr Mario Herrero who have supported the research throughout.

The students at the school were very welcoming and helped us when they could. A special thank you to "Beto", the goat supervisor, who was the nicest person we could have hoped for despite the language barrier.