

## EFFECTS ON INTAKE OF CONCENTRATE WITH INCREASING LEVELS OF FLAVOUR AGENT IN THE DIET OF DAIRY CALVES

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### Introduction

The utilization of additives in calves nutrition to accelerate their development are a new advantage as possibility to reduce cost and time of nursing in these category. Among additives used are flavour agents, which increase the intake of solid feeds, proportioning a fast ruminal development and anticipating weaned period. Several flavour agents reproduce the preferred taste, as milk and citric flavour, to ruminants, and principally calves. This work evaluated increasing levels of citric flavour agent in the diet of dairy calves and his relation with intake of concentrate.

### Material and Methods

The trial was conducted in Department of Animal Science, Universidade Federal de Santa Maria, Brazil, in June, 2003. It were utilised 8 Holstein male calves, weaned with three months of age housed in individual cages and all animals were submitted at the four treatments: T1-without addition of flavour agent, T2-150 gr. of flavour agent/ton. of concentrate, T3-300 gr. of flavour agent/ton. of concentrate and T4-600 gr. of flavour agent/ton. of concentrate. The flavour agent utilised was Euroarom<sup>®</sup>RW-47, which reproduce citric smell and taste. The trial occurred during three days, where the calves has ration *ad libitum*, and intake was calculated by difference between ration offered and ration rested. The ration was a commercial concentrate and nutritional value found in Table 1. During the trial, the animals also received alfalfa hay as fibre source on the diet and had water supply *ad libitum*. The experimental design utilized was entirely randomized and data were submitted at ANOVA and Tukey's Test.

Table 1- Nutritional value of concentrate offered

DM(%)	CP (%DM)	CF (%DM)	Fat (%DM)	Ash(%)	TDN(%)
86.65	19.18	4.61	9.96	6.41	78.41

### Results

The results found in Table 2. Average daily intake of concentrate observed during three days of trial was 347.92 gr. to the level without flavour agent and 83.88 gr., 83.92 gr., and 367.08 gr. of concentrate to the levels 150, 300 and 600 gr. of citric flavour agent/ton. of concentrate, respectively. Levels 0 and 600 gr. of flavour agent were significantly different ( $P < 0.0001$ ) at the levels 150 and 300 gr. of flavour agent/ton. of concentrate.

### Discussion

The data observed for intake agree with Albright (1993) who said there is a tendency to increase of intake with the use of flavour agent. Lucci (1989) and Montardo (1988) obtained increase in the intake using apple flavour agent and milk flavour agent, respectively. Cheeke (1991) observed that flavour agent induce a major intake in foodstuffs with poor quality, but our data are more similar at the obtained by Morril & Dayton (1974), Lucci (1989) and Nombekela et al. (1994) which utilized foodstuffs with good quality and obtained increases when added flavour agents in concentrate.

Table 2 – Average daily intake with increase of levels of addition of flavour agent:

	T1	T2	T3	T4
Average intake (gr./day)	347.92	83.88	83.92	367.08

### Conclusion

The authors conclude that high levels of flavour agent in the diet of dairy calves have a positive influence on intake of concentrate.

### Acknowledgements

We acknowledge Eurotec Nutrition<sup>™</sup> of Brazil by support of trial and supply of citric flavour agent.

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