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Presenter Information

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Growth of carcass tissues in grazing nursing calves supplemented or not

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Key words : calves ,milking ,grazing ,tissue growth .

Introduction Brazil has been standing out in the world market as a large meat exporter .Despite this ,the meat quality produced in pasture based production systems has been widely criticized .The main negative point is the reduced carcass fat deposition .Carcass fat has a double effect in guaranteeing meat quality : protection against cold shortening and it is responsible for the softening and flavor of the main commercial cuts .Carcass composition begins to be defined by the tissues formed in the initial phases of life .In this context ,the objective of this study was to evaluate the growth rate of carcass tissues in grazing nursing calves ,supplemented with different protein concentrated rations .

Materials & Methods This work was carried out in the region of Viçosa ,MG ,Brazil .A total of 17 Nelore beef calves with initial age of 100 days and initial weight of 129 kg were used .Five animals were slaughtered at the beginning of the experiment , representing the initial carcass composition .The remaining animals with their mothers were separated into four groups that received different concentrate supplement in a "Creep-Feeding" system .The evaluated groups received : *ad libitum* mineral salt (control treatment) and rations with 8 ,22 and 32% of crude protein (CP) formulated with corn and soybean meal ,daily fed at 1 .2 kg/animal .The animals were kept in pastures formed with *Brachiaria decumbens* Stapf .The calves were slaughtered after 120 days .The right half carcass ,after chilling ,was separated in its physical components (muscles ,fat tissue and bones) and weighted .Regression equations of logarithm of weight of each tissue were adjusted as a function of log of LW-allometric equations (ARC ,1980) .The estimated parameters of each equation were compared through the confidence interval of each estimate as suggested by Kaps & Lamberson (2004) .The significance level used was 5% .

Results & Discussion The parameters estimated for allometric equations were in Table 1 .The allometric coefficients of all body tissues were similar for all the evaluated treatments .Unlike the expected ,the overlapping of confidence intervals showed no significant effects of the type of supplement on the composition of carcass gain .This can be explained by a low capacity of fat tissue deposition in young bovine .The evaluation of the allometric coefficients indicated that the bone tissue has early growth , the fat tissue has late growth and that the muscular tissue grows at a rate similar to the body as a whole at this life phase .

Table 1 Parameters and confidence interval for the parameters of allometric equations of carcass tissue growth .

Supplement	Intercept			Allometric Coef .			Coef of Determination (R ²)
	Estimated	Confidence Interv .(95%)		Estimated	Confidence Interv .(95%)		
		Low	High		Low	High	
Muscle Tissue							
Salt	-1 .8451	-2 .4086	-1 .2816	1 .0168	0 .8964	1 .1372	98 .6
8% CP	-1 .8429	-2 .4422	-1 .2436	1 .0162	0 .8863	1 .1461	98 .4
22% CP	-1 .9164	-2 .5104	-1 .2224	1 .0364	0 .8874	1 .1854	97 .9
32% CP	-1 .9283	-2 .6064	-1 .2502	1 .0393	0 .8929	1 .1855	98 .1
Fatty Tissue							
Salt	-5 .3448	-7 .0403	-3 .6493	1 .3411	0 .9787	1 .7035	93 .2
8% CP	-5 .5874	-7 .4217	-3 .7531	1 .4034	1 .0055	1 .8013	92 .5
22% CP	-5 .8926	-7 .7611	-4 .0241	1 .4732	1 .0719	1 .8745	93 .1
32% CP	-5 .5690	-7 .2857	-3 .8521	1 .3963	1 .0258	1 .7668	93 .4
Bone Tissue							
Salt	-1 .9213	-2 .4146	-1 .4280	0 .8339	0 .7284	0 .9394	98 .4
8% CP	-1 .7637	-2 .2198	-1 .3076	0 .794	0 .6951	0 .8929	98 .5
22% CP	-1 .8743	-2 .2644	-1 .4842	0 .8224	0 .7387	0 .9061	99 .0
32% CP	-1 .8294	-2 .2848	-1 .3740	0 .8106	0 .7125	0 .9087	98 .6

Conclusions The use of concentrated supplementation with different levels of protein did not affect the relative growth rate of carcass tissues in grazing calves in milking phase .It seems important to carry out more experiments to evaluate the effect of different strategies of supplementation of young bovines on carcass tissue growth in more advanced ages .

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