

# URUGUAYAN BEEF CALVES COMPENSATORY GROWTH: META-ANALYSES

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## Introduction and Objective

- In beef production systems, compensatory growth is frequently used to reduce production costs through redistributing feed supply from a time of the year when pasture availability and/or quality is low towards a time when pasture is plentiful.
- The objective of this study was review national published information and conduct a meta-analysis evaluating: a) compensatory growth in Uruguayan beef calves, and b) compensatory growth under different re-alimentation diets (natural grass vs. sown pasture).

## Materials and Methods

- A review of the published data from INIA since year 2000 was done.
- 17 experiments with 32 comparison.
- Population characteristics were: 1,635 calves with 9±1 month of age, 175±20 kg of body weight, British or Indicus crossbred.
- The model with discrete predictor variable(s) suggested by Sauvant et al. (2008) was used, weighting each observation by the inverse of the standard errors of each mean (s.e.m).

## Results

- Compensatory growth index across all experiments with their 32 comparisons was 19%. However, higher compensatory index responses were evident when refeeding were on sown pastures versus natural grass (33% vs. 8%, respectively; Table 1).

Table 1. Live weight and ADG during restriction (99±13 and 94±14 days) and re-alimentation period under natural grass or sown pasture (118±49 and 157±64 days, respectively) for un-restricted and restricted treatments.

	Natural grass: 445 calves (8 experiments, 17 comparisons)				Sown pasture: 1190 calves (9 experiments, 15 comparisons)			
	Un-restricted	Restricted	SE	p-value	Un-restricted	Restricted	SE	p-value
Initial weight (kg)	169	168	6	ns	181	181	3	ns
Weight at the end of restriction period (kg)	227	194	9	**	262	230	7	**
ADG during restriction period (kg/day)	0.61	0.24	0.06	**	0.85	0.51	0.08	**
Weight at the end of refeeding period (kg)	301	270	9	**	344	322	4	**
ADG during refeeding period (kg/day)	0.64	0.65	0.03	ns	0.62	0.70	0.08	**

ns = non significant; \* = p<0.05; \*\* = p<0.01

## Conclusion

**The ability of calves to express compensatory growth in Uruguayan grazing conditions of production is relatively low. However, the compensatory growth response is much greater when re-alimentation is practiced on high quality sown pasture relative to natural grass.**

## References

Sauvant, D.; Schmidely, P.; Daudin, J. J.; St-Pierre, N. R. 2008. *Animal* 2(8): 1203–1214.