

Reproductive performance in primiparous cows showing different growth patterns



Sanz A., Rodríguez-Sánchez J.A., Casasús I.

CITA de Aragon, Avda. Montañana 930, 50059 Zaragoza, Spain (asanz@aragon.es)



First calving

dairy

beef



OBJECTIVE: To assess the viability of ACCELERATED REARING in beef cows, through the study of nutrition level effects from heifers' birth to first mating on their subsequent onset of puberty, fertility and performance in primiparous cows.

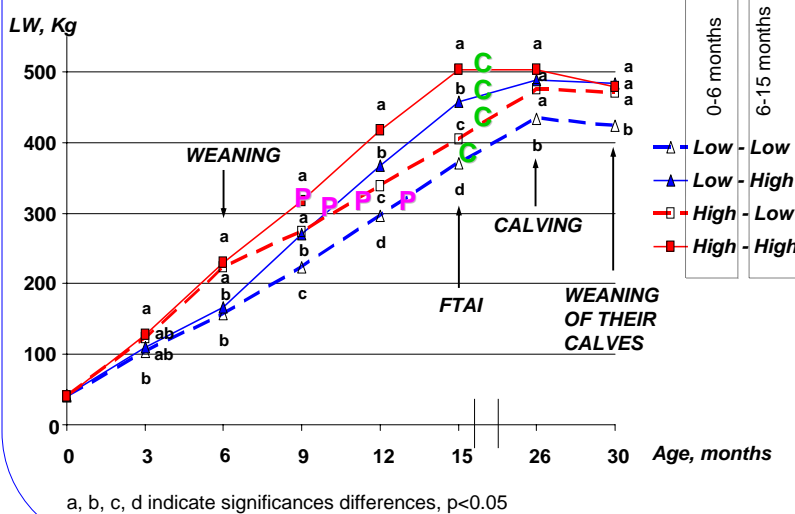
CONCLUSION: These results would confirm the feasibility of advancing the first service from 21 to 15 months of age in beef cattle, provided that growth rates close to 1 kg per day in the rearing period are guaranteed

MATERIAL AND METHODS

- 29 Parda de Montaña (old Brown Swiss) heifers born in autumn, in a 2 x 2 factorial design, combining two growth rates in:
 - LACTATION** (0-6 months, dam's milk)= Low (700 g/d) vs High (1000 g/d; + starter concentrate ad lib)
 - REARING** (6-15 months, alfalfa hay ad lib)= Low (700 g/d; +6g concentrate/kg BW) vs High (1000 g/d; +12g concentrate/kg BW)
- At 15.5 months heifers treated with an **intravaginal progesterone device (PRID, CEVA, Spain) and Ovsynch protocol**, being inseminated 14 days later (FTAI). A second IA at heat detection was performed in non-pregnant heifers.
- Blood samples weekly during rearing and postpartum for **progesterone** analysis by a commercial kit (Ridgeway Science, UK).
- **Productive parameters** registered weekly from heifers' birth until weaning of their first calves (30 months).

RESULTS

GROWTH PATTERNS



PERFORMANCES

✓ **AVERAGE DAILY GAINS** (figure) in the different phases influenced by lactation and rearing nutrition levels, heifers being able to compensate the lower growth rates in previous phases, depending on feed availability

✓ **AGE AT ONSET OF PUBERTY (P)** affected by nutrition level offered during lactation (10.3 vs 12.0 months, in High and Low, $p < 0.01$) and rearing (9.8 vs 12.5 months, in High and Low, $p < 0.001$) periods. Live-weights (LW) at onset of puberty similar in all lots (327 kg, corresponding to 56% adult live-weight in this breed)

✓ **AGE AT CONCEPTION (C)** and **FERTILITY RATE** similar in all lots (16.4 months; 89%, respectively).

✓ **PRIMIPAROUS COWS' PERFORMANCE** not affected by growth patterns, except for weight at calving (495.8 vs 454.4 kg, in High and Low, $P < 0.01$) and postpartum anoestrus (77.7 vs 106.5 days, in High and Low, $P < 0.05$), both influenced by the Rearing nutrition level.



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