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Effect of selection for residual variance of litter size on body condition in rabbit does

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A divergent selection experiment for residual variance of litter size (V_e) has been performed on rabbits at University Miguel Hernández of Elche in Spain. The V_e was estimated as phenotypic variance of Litter Size (LS) within female after correcting LS for the effects of year-season and lactation status. After seven generations of selection, High (H) line showed 30% more V_e and 6% less LS than Low (L) line. The objective was to analyse whether selection for V_e has affected the body condition of female. Body condition was measured as Body Weight (BW) and Perirenal Fat Thickness (PFT) at 2nd mating, delivery and 10th day of lactation. The Non-Esterified Fatty Acid (NEFA) was also measured before and after stimulation with isoproterenol (NEFAB and NEFAR). All analyses were performed using Bayesian methodology. The model included the effects of line-physiological stage (H and L lines at 2nd mating, delivery and 10th day of lactation), lactation stage (lactating and non-lactating), season and an effect of female. BW, PFT and NEFAB were not affected by selection. BW and PFT decreased between mating until delivery and increased between delivery until 10th day of lactation in both lines. However, NEFAB showed inverse pattern. From mating to delivery, NEFAR decreased by -17.9% in H line, while L line increased by 57.7%. From delivery to 10th day of lactation, NEFAR decreased slightly by -6.2% in H line but L line decreased strongly by -36.6%. In conclusion, L line has greater lipolytic potential than H line at delivery, when female has higher energy requirements.

Biography

Eddy Wilfredo Calle studied Agriculture Engineering and obtained his MSc from Technical University of Oruro. He is an Assistant Professor of Experimental Design in Technical University of Oruro, Bolivia. Currently, he is a PhD student at University Polytechnic of Valencia with an Erasmus Mundus Fellowship (Babel Project) until July 2016. He actively collaborates with the division of Animal Production at University Miguel Hernández. The main topic of his research is rabbit breeding.

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