# Innovative sustainable organic beef production system where quality replaces quantity

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# Abstract

The GrOBEat project proposes an innovative organic beef production system that offers a diversity of beef products (A, B, and C), is based on offspring from dairy cows, and which scores high on animal welfare, biodiversity and climate thus addressing specific criteria of major importance for the consumers. Furthermore, the high level of meat- and the sensory quality together with the storytelling of the system address that “less is more”, which is supposed to facilitates healthier eating habits, while ensuring wellbeing, and providing the organic dairy sector with improved credibility for “license to produce”.

The GrOBEat production system is based on steers and includes calf rearing by a foster cow for up to 6 months, use of low energy density roughage during winter, and utilizes extensive pasture for weaned steers. The system takes advantage of the variation in growth capacity between animals by slaughtering 1/3 of the best performing calves at 8 months as high value rosé veal (A), another 1/3 of the steers at 16 months as young beef (B), and the last 1/3 of the steers at 26 months as mature beef (C). This gives three well characterized products compared with the current one product from intensive conventional rosé veal production and the traditional organic beef from steers slaughtered at 24-26 mo.

The A steers were slaughtered at 347 kg LW, the B steers at 544 kg LW, and the C steers at 732 kg LW. The A steers spent 126 days, the B steers 267 days, and the C steers 367 days of their life on pasture. The A steers had the highest feed efficiency, and the C steers the lowest. However, when considering the feed intake by the foster cow, feed efficiency of the A and B system did not differ. In the A system, 71% of the feed intake was assigned to the foster cow, 32% in the B system, and 20% in the C system.

Finally, the system was evaluated both from a farmer perspective focusing on feed efficiency and economic return per animal and feeding day and from a society perspective focusing on carbon footprint and biodiversity per kg carcass using LCA.