EFFECT OF WEANING AGE, DIET AND BREED ON PRODUCTION, CARCASS QUALITY AND PROFITABILITY OF RABBIT REARING ON SMALLHOLDER FARMS IN KENYA

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Egerton University

August, 2016
DECLARATION AND RECOMMENDATION

DECLARATION

This thesis is my original work and has not been presented in this University or any other known to me for the award of a degree.

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RECOMMENDATION

This thesis has been prepared with our supervision and submitted for examination with our approval and recommendation as the University supervisors.

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ABSTRACT

Commercial rabbit production in Kenya is characterized by a long interval of 8 to 12 weeks between kindling and next mating, which yields fewer rabbits for sale to earn income. Changing weaning age regimes can influence the technical and economic results. This study aimed at informing interventions for weaning management by testing associations that weaning age has with feeding practices, market weight, carcass quality and consumer preferences of rabbit meat and profitability. Data on production was from farm records of 100 rabbit farmers randomly selected among members of the Rabbit Breeders Association of Kenya (RABAK) in Counties prominent in commercial rabbit production. Carcass quality and consumer preferences were evaluated using 36 rabbits in a 2 x 2 x 3 factorial design representing weaning ages (4 and 8 weeks), diets (mixed and pellets) and breeds (California White, New Zealand White and Chinchilla) respectively. General linear model and simulation modeling were applied to assess the effects of weaning age, VAT charges and slaughter price. Compared to 8 weeks weaning, farmers weaning at 4 weeks offered more dry matter, whether pellets (166 vs 113 grams) or mixed diets (120 vs 66 grams) and attained higher market weights with California (2.9 vs 2.3 Kg) and with New Zealand white (2.8 vs 1.9 Kg) compared to Chinchilla which was heavier with 8 weeks weaning age (2.7 Kg). Weaning age had effect (p<0.001) on the hot carcass weight, all first and second retail cuts but was insignificant (p>0.05) on consumer preferences. The interaction effects between weaning age and the breed had effects (p<0.05) on consumer preferences which was higher (p<0.001) for the hind legs. Three-way interaction effects of weaning age, breed and feeding diets had effect (p<0.05) on hot carcass weight, hot and chilled loin weights (p<0.05). Compared to weaning at 8 weeks, weaning at 4 weeks was more profitable on mixed diet by 125.04% (KES 53639 vs 23835) and on pellet diet by 131.71% more (KES 106776 vs 46082) while reducing weaning age from 8 to 4 weeks improved profit by 9.5% on mixed diets and by 13.8% on pellets. Inclusion of 16% VAT on pellets reduced profit by 6% when weaning at 4 weeks age and by 8% when weaning at 8 weeks. For rabbits sold at KES 518, profit improved by 35% when sale priced increased to 700 but decreased by 32% if sale priced declined to KES 350 for 4 or 8 weeks weaning regime on pellets. It is concluded that weaning at 4 weeks or 8 weeks of age produce heavier, better quality carcass and more profits if rabbits are fed on quality commercial pellets.

Key words: Rabbits, Smallholders, Weaning age, Carcass quality, Consumer preference, Gross margins, Sensitivity analysis.
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