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The Role of Meat Quality in Conservation of Indigenous Endangered Farm Animals: Case Study of Endangered Goose Breeds "Diepholzer Gans"

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Abstract

Erosion of livestock genetic resources increased since industrialisation in agriculture. Today 30 % of the farm animal breeds are at risk of being lost. This is mainly caused by replacement of local indigenous breeds of livestock with high productive hybrid breeds. Livestock genetic resources form the pool of diversity available to meet the increasing global demand for food and agriculture. "Diepholzer Gans" is an indigenous endangered breed of goose, which originated in Germany. Its performance and features have been compared with a hybrid breed of the company "Eskildsen" as a reference, especially for meat quality, under identical feeding and housing conditions. The aim was to recognise parameters that support the conservation of the endangered breed of goose by means of "on-farm" strategy and marketing on niche markets, as one of the most cost efficient conservation strategies. The influence of breed type was evaluated by determining body weight gain, feed intake, feed conversion ratio, health status, carcass value and meat quality of the geese. Significantly higher body weight gain (6.3 kg living weight for Eskildsen and 5.6 kg for Diepholzer breed) and lower feed conversion ratio for the hybrid breed were determined. Dressed body, breast and thigh weight were significantly lighter for the Diepholzer breed. The muscle fraction in the breast and thigh was higher for the Eskildsen breed. No differences were found in the electric conductivity and pH value except at 20 minutes post-mortem in breast muscle when the conductivity was higher for the Diepholzer. Colour scale values; L*, a* and b* of the two breeds were not significantly different. The drip loss of fresh breast muscle was significantly higher for the local breed. The type of breed did not affect freezing loss, cooking loss and the shear force. In conclusion the "Diepholzer Gans" gained 12% less body weight and there were no relevant differences in meat quality. Nevertheless marketing of the Diepholzer based on better quality to encourage conservation by means of "on-farm" strategy is impossible. But, using the Diepholzer breed on niche markets in combination with other aspects that indicate a regional product, make this strategy possible.

Keywords: Diepholzer goose, indigenous endangered breeds, livestock genetic resources, meat quality, on-farm conservation

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