Evaluation of the Quality Traits of Pork from Cross Bred Local Pigs under Free Range and Semi Intensive Systems

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This study was done to evaluate the meat quality, composition and sensory parameters of pork obtained from two different rearing systems. Four semi-intensively reared and four extensively reared finishing pigs were used to determine the meat quality parameters. The extensively reared pigs were subjected to walk around the day time and also during night. Swill feeding was done for both rearing systems. *Longissimus dorsi* muscle from each animal was taken just after slaughtering. Quality traits of pork (pH, colour, water holding capacity, cooking loss) and proximate composition (protein, fat, moisture, ash) were evaluated using standard methods while fatty acid profile was measured using Gas Chromatography. A sensory evaluation was done using 30 untrained panellists. Data were analysed using Statistical Analysis System, version 9.1. The rearing system had no influence on water holding capacity, colour, pH' and cooking loss ($P>0.05$). The redness (a* value) of meat from extensively reared pigs were not significantly different from that from semi-intensively reared pigs. This is due to the less amount of difference in exercise gained in two rearing systems. The amount of exercise is not enough to increase the myoglobin content in pork from extensive rearing system. The protein, fat, moisture and ash contents were not significantly different between the pork taken from semi-intensive and extensive rearing systems. There was a significant difference in vaccenic acid and total monounsaturated fatty acids between the two groups. There was no significant difference between unsaturated to saturated fatty acid and between the contents of omega-six to omega-three fatty acids. The unsaturated fatty acids are more important in sensory attributes such as taste. There was no significant difference in unsaturated fatty acids between the two pork types. All the above quality traits affect consumer acceptance and the sensory attributes. Sensory analysis also showed that there is no significant difference in seven parameters including taste, odour, colour, juiciness, tenderness and overall acceptability.

Keywords: Semi-intensive, Crossbred, Local pigs, Meat quality, Extensive