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The effect of dry aging on instrumental, chemical and microbiological parameters of organic beef loin muscle

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1 **The effect of dry aging on instrumental, chemical and microbiological parameters of**
2 **organic beef loin muscle**

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13
14 **Abstract**

15 The aim of this study was to assess the effect of aging at 1 °C for 12-36 d on instrumental,
16 chemical and microbiological characteristics of beef loin muscles. There were no significant
17 changes in pH, L*, a* and b* during prolonged aging. The aging of beef had a positive effect
18 on its tenderness as demonstrated by decreasing of shear force. The water losses amounted to
19 around 3.0% up to 21 d of aging, with further increase with an extended period of aging.
20 Fresh beef had a good microbiological quality with Total Viable Count, psychrotrophic and
21 lactic acid bacteria of 2.59±0.65, 2.47±0.61 and 1.04±0.25 log CFU per cm² of the surface,
22 respectively. The mean values for Total Viable Count and psychrotrophic microorganisms
23 after 14 and more days of aging were approx. 5 log CFU/cm². Prolonged aging for more than
24 14 d increased tenderness but did not promote microbial growth.

25
26 **Keywords**

27 dry aging; beef; organic meat; Warner-Bratzler; meat color

28
29 **1. Introduction**

30 Tenderness is one of the most frequently studied characteristics of cooked meat (Baldwin,
31 2012). The tenderness of meat is influenced primarily by the composition and contractile state
32 of muscle fibers, the amount and solubility of connective tissue, and the extent of proteolysis
33 post mortem (Joo, Kim, Hwang, & Ryu, 2013). Proteolytic changes in the muscles after the
34 slaughter of the animal are part of the process called meat aging. Meat aging is a complex

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