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Effect of Willow Silage on Carcass Characteristics and Meat Quality of Fattening Awassi Lambs

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Abstract

The objective of this study was to evaluate the effect of willow silage (*Salix* spp.) on carcass characteristics and meat quality of Awassi lambs in Jordan. Twenty-six male Awassi lambs were randomly assigned to three groups with different levels of silages (0%; 50%; and 100 % of forage in the diet). Lambs in control (0 %) group were only fed wheat straw as forage; lambs in WS50 were fed 1:1 ratio of straw and willow silage, while WS100 group only fed willow silage as forage in their diet. Concentrate were formulated accordingly to each diet to fed iso-caloric, iso-nitrogenous rations. Lambs were fed high concentrate diet (20:80, F:C ratio) for 90 days after which 5 lambs from each group were sacrificed to study the effects of willow silage on carcass characteristics and meat quality in Awassi meat. Hot carcass weight, cold carcass weight, dressing percentages and weight of internal organs were all unaffected by feeding willow silage. Kidney fat for control lambs was significantly ($p < 0.05$) higher (141g) compared to the WS50 and WS100 (64 and 81g, respectively). As a percentage of cold carcass weights, control had significantly ($p < 0.05$) heavier loin cuts and lighter fat tail compared to other silage groups. Although loin width was significant ($p < 0.05$) higher in control lambs, total loin area was not significant. No different were observed in total muscle, total fat, subcutaneous fat and total bone of lambs' legs among all groups. Muscle to bone ratio and fat to bone ratio were also not effected by feeding willow silage. Lambs meat were fed WS100 were lighter than lambs fed WS50 and control groups but the different was not significant. On the other hand, shear force measurement on Longissimus muscle was significantly lower in WS100 compared to control (6.1 vs 8.8 newton), WS50 lambs were intermediate. In conclusion, feeding willow silage to weaned Awassi lambs increase fat deposition on the tail and increase meat tenderness (Lower shear force) compared to lambs fed common dry forage.

Keywords: Carcass characteristics, meat quality, willow silage (*Salix* spp.)