

Supplemental Hibiscus sabdariffa calyces meal improves water-holding capacity, decreases fat content of Japanese quail meat and maintains meat yield and tenderness

Ndlovu Nomagugu, Erlwanger Kennedy Honey, and Chivandi Eliton

Abstract

The potential negative impact caused by synthetic feed additives residues has increased consumers' concern on their use in poultry feed. Hibiscus sabdariffa is a reported potential natural source of nutraceuticals. The effects of supplementing a standard quail finisher diet (SQFD) with H. sabdariffa calyces meal on meat quality of male broiler Japanese quail were investigated. Twenty-nine (29), 35-day old quail, individually housed, were, in a completely randomised design, allocated to three H. sabdariffa calyces meal supplemental levels for 28 days as follows: diet 1 - SQFD, diet 2 - SQFD + 5% H. sabdariffa calyces meal (w/w) and diet 3 SQFD + 10% H. sabdariffa calyces meal (w/w). Following slaughter, carcass mass, dressing percent and the physico-chemical properties of the meat were determined. Carcass mass, dressing percent of the quail, the colour and tensile strength of the quail were not affected ($P > 0.05$) by dietary H. sabdariffa calyces meal. Dietary H. sabdariffa calyces meal significantly increased the pH decline and water holding capacity of the quail's breast meat ($P < 0.05$). The crude protein content of thigh meat from quail fed diet 3 was significantly higher ($P = 0.003$) compared to quail fed diets 1 and 2. At 10% inclusion dietary H. sabdariffa calyces meal significantly reduced ($P < 0.05$) the lipid content of the quail breast and thigh meat. Dietary H. sabdariffa calyces meal reduced the lipid content of quail meat; therefore, H. sabdariffa calyces meal could be exploited to produce leaner but more protein-dense quail meat.

Keywords: nutraceutical; Hibiscus sabdariffa; quail; meat quality