



University of Zabol

Faculty of Agriculture

Department of Animal Science

MSc Thesis

Poultry Nutrition

**Adding grain sorghum instead of corn in Japanese  
quail diet**

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### **Abstract**

In the current situation of the country, the import of grain corn or its domestic supply is associated with various challenges, hence, replacing sorghum and other materials instead of corn in livestock and poultry diets has become an important issue. Therefore, The purpose of this study was to examine the effects of substituting corn with sorghum grain on performance, carcass quality, and immune response of Japanese quails was performed. The study included two hundred Japanese quails during third periods (week) of 21 days. The study had a completely randomised design with four treatments and five replicates with ten birds per replicate. The treatments consisted of diets containing 0 (control) ,5, 10, 15 and 20% of sorghum. The results showed that in the third week of rearing, the control treatment had the best feed consumption, weight gain and feed conversion ratio in Japanese quail, and the control treatment had the highest breast, intestine and liver weight compared to other groups. There are no significantly difference of sorghum levels on thigh, heart, pre-stomach, kidney, spleen and bursa weight, quality parameters of quail meat (drip loss, cooking loss, pH, water-holding capacity and malondialdehyde), blood parameters (Albumin, glucose, cholesterol, triglyceride and total protein), liver enzymes (AST, ALT), antibody titer against sheep red blood cell and Newcastle in Japanese quail. In general, it can be concluded that sorghum can be used as a substitute for corn if it is used at low levels (5%).

**Keywords:** Japanese quail, immune response, carcass properties, blood parameters, performance , sorghum