

EFFECTS OF USING FENNEL SEEDS IN GROWING JAPANESE QUAIL DIETS VARYING IN THEIR PROTEIN CONTENT WITH OR WITHOUT ENZYME SUPPLEMENTATION

Mona S. Ragab

Poultry Production Dept., Faculty of Agriculture, Fayoum Univ., Fayoum, Egypt.

ABSTRACT

This experiment was conducted to study effect of using fennel seeds in growing Japanese quail (*Coturnix coturnix japonica*) diets varying in their protein content with or without enzymes supplementation. At 10 days of age birds were divided into twelve treatments (60 birds each), each treatment contained 3 replicates of 20 birds each. The experimental treatments were as follows:-

- 1 Chicks were fed the control diet containing 24% crude protein (CP), diet 1.
- 2 Chicks were fed diet 1+ 0.1% kemzyme dry (KD).
- 3 Chicks were fed diet 1 + 1% fennel seeds.
- 4 Chicks were fed diet 1 + 1% fennel seeds + 0.1% KD.
- 5 Chicks were fed diet containing 21%CP.
- 6 Chicks were fed diet containing 21%CP + 0.1% KD.
- 7 Chicks were fed diet containing 21%CP + 1% fennel seeds.
- 8 Chicks were fed diet containing 21%CP +1% fennel seeds+ 0.1% KD.
- 9 Chicks were fed diet containing 18%CP .
- 10 Chicks were fed diet containing 18%CP + 0.1% KD.
- 11 Chicks were fed diet containing 18%CP + 1% fennel seeds.
- 12 Chicks were fed diet containing 18%CP +1% fennel seeds+0.1% KD.

Results obtained could be summarized in the following:

- 1- Quail fed the control + fennel + KD had higher values of live body weight (LBW) at 31 and 38 days of age, however, those fed 18 % CP + fennel had lower LBW at the same ages.
- 2- Quails fed diet control + fennel + KD had the heaviest live body weight gain (LBWG) during the period from 10 to 38 days of age, whereas quails fed diet 18% CP + fennel + KD had the lower LBWG during the previous period.
- 3- Quails fed 18% CP+ fennel had lower feed intake (FI) during the period from 10 to 38 days of age. However, quails fed control diet had the highest FI value during the same period.
- 4- Quails fed diet containing 21% CP+KD had better feed conversion value during the period from 10 to 38 days.
- 5- Quails fed diet containing 18 % CP + fennel had the better crude protein conversion (CPC) value during the period from 10 to 38 days of age. Quails fed control diet + fennel had the worst CPC value during the period from 10 to 38 days of age.
- 6- Quails fed control diet+ fennel +KD had higher performance index value during the period from 10 to 38 days.
- 7- Insignificant effects on slaughter parameters of Japanese quails were found. Females had higher carcass weight before evisceration%, liver% and total giblets% than males. Males had higher heart%, abdominal fat%, carcass weight after evisceration%, whole front%, whole rear%, rear meat% and dressing% than female.
- 8- Quails fed diet containing 21 % CP + KD had the lower serum cholesterol while quails fed diet containing 18 %CP+ fennel +KD had the higher contents of serum glucose.
- 9- Higher moisture and protein (the lowest fat%) values were observed for quails fed diet containing 21% CP while those fed 21% CP+ fennel had the highest fat % (and consequently the lowest moisture and protein%).
- 10- The percentage of mortality was 3.33% in quails fed diet containing 18% CP+ KD. However quails fed control diet, control diet+ KD, control diet+ KD +fennel, 21% CP, 21% CP+ KD and 18% CP the percentage of mortality was 1.67%. No mortality was found in quails fed other experimental diets.
- 11- Quails fed D9 (containing 18% CP) gave the best economical and relative efficiency values, followed by quails fed D11 (containing 18% CP+1% fennel seeds) when compared with the other treatments or the control.

It can be concluded that

- 1- The supplementation of growing Japanese quail diet with 1.0% fennel improved productive performance.
- 2- Starter diets for quail should contain protein content of 24% this may be reduced to 21% at few weeks later.

Key words: Medicinal and aromatic plants, fennel, protein restriction, enzymes, Japanese quail.