

EFFECTS OF SUBSTITUTING YELLOW CORN BY BY-PRODUCTS OF SOME MEDICINAL AND AROMATIC PLANTS WITH OR WITHOUT ENZYME SUPPLEMENTATION ON GROWING JAPANESE QUAIL PERFORMANCE

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ABSTRACT

The experimental work of the present study was carried out at the Poultry Research Station, Poultry Production Department, Faculty of Agriculture, Fayoum University. Chemical analyses were performed in the laboratories of the same Department.

The experiment was conducted during the period from March to April 2005. The effect of substituting yellow corn by some by-products of medicinal and aromatic plants with or without enzyme supplementation was studied on growing Japanese quail performance. Fourteen dietary treatments were designed to study the effects of substituting yellow corn by some by-products of medicinal and aromatic plants with or without enzyme supplementation. The by-products were parsley, dill and peppermint.

Live body weight (LBW) and Live body weight gain (LBWG): Quails fed diet 10 (parsley BP replacing 16% YC + 0.1% KD) had higher LBW at 38 days of age and LBWG during the period from 10 to 38 days of age. Quails fed diet 13 (peppermint BP replacing 16% YC) had lower LBW at 38 days of age and LBWG during the period from 10 to 38 days of age. Quails fed diet 11 (peppermint BP replacing 8% YC) had heavier LBW at 45 days of age and LBWG during the period from 10 to 45 days of age. Quails fed control diet had lower LBW at 45 days of age and LBWG during the period from 10 to 45 days of age.

Feed intake (FI): Quails fed diet 2(control + 0.1% KD) had significantly lower FI during the periods from 10 to 38 and 10 to 45 days of age.

Feed conversion (FC) , Crude protein conversion (CPC) and Caloric conversion ratio (CCR): - Quails fed diet 8 (parsley BP replacing 8% YC + 0.1% KD) had the best FC and CCR values during the period from 10 to 38 days of age, quails fed diet 2 (control + 0.1% KD) had the best CPC value during the same period (10 to 38 days of age). Quails fed diet 2 (control + 0.1% KD) had the best FC, CPC and CCR values during the period from 10 to 45 days of age, followed by those fed diet 14 (peppermint BP replacing 16%YC+0.1% KD) during the same period. Quails fed diet 5 (dill BP replacing 16% YC) had the worst FC, CPC and CCR values during the periods from 10 to 38 and 10 to 45 days.

Performance index (PI): Quails fed diet 8 (parsley BP replacing 8% YC + 0.1% KD) had significantly higher PI during period from 10 to 38 days of age. Quails fed diet 2 (control + 0.1% KD) had significantly higher PI value during the period from 10 to 45 days of age.

Slaughter parameters: Quails fed diet 13 (peppermint BP replacing 16% YC) and 14 (peppermint BP replacing 8% YC+ 0.1% KD) had significantly higher gizzard% and total giblets%.

Serum constituents: Quails fed diet 10 (parsley BP replacing 16% YC+ 0.1% KD) had significantly higher serum total protein and globulin.

Chemical composition of Japanese quail meat: The highest moisture and protein (the lowest fat %) value was observed for quails fed diet 13 (peppermint BP replacing 8% YC), while those fed diet 2 (control + 0.1% KD) had the highest fat % (and consequently the lowest moisture and protein %).

Mortality rate: Mortality was zero% in quails fed diet 3 (dill BP replacing 8% YC), 4 (dill BP replacing 8% YC + 0.1% KD), 5 (dill BP replacing 16% YC), 8 (parsley BP replacing 8% YC + 0.1% KD) and 14 (peppermint BP replacing 8% YC+ 0.1% KD). However quails fed diet 9 (parsley BP replacing 16% YC) had the highest mortality rate being 2.9%. The percentage of mortality was 1.5% in quails fed the other diets.

Economical efficiency (EEf): Quails fed diet 9 (parsley BP replacing 16% YC) gave the best economical and relative efficiency then quails fed diet 8 (parsley BP replacing 8% YC + 0.1% KD), and followed by those fed diet 10 (parsley BP replacing 16% YC+ 0.1% KD) during the period from 10 to 38 days of age. It can be concluded that MAPB can be used instead of YC in Japanese quail feeds at a level to substitute up to 16% of YC. The diet of choice is that containing parsley followed by peppermint then dill.

Key words: Medicinal and aromatic plants, peppermint, parsley, dill, by-products, enzymes, Japanese quail.