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SUMMARY

Four experiments were carried out at Agriculture Research Center, Alexandria University (Poultry Production Department), to study the effect of using DSM in the broiler vegetable diets.

The First Experiment:

Fifty Hubbard broiler chicks were used in this experiment and randomly assigned to five groups. In each group the chicks were divided into two replicate. The experiment period lasted from 3-42 days of age, the groups was fed diets with 0.05, 0.10, 0.15 and 0.20% DSM as a feed additives. At the end of the experiment, 3 chickens from each group were slaughtered and the carcass characteristics and organs weight were determined. The results obtained from this experiment could be summarized as follows:

1- There were improvement in body weight of groups fed 0.10, 0.15 and 0.20% DSM as compared to the control group but these increases were insignificant.

2- There was 5-75% increase in body weight gain between the groups fed diets containing 0.10, 0.15 and 0.20% DSM as compared to the group received control diet.

3- There was no significant affect through the experimental period for feed consumption except for the first two weeks between the groups fed diets containing 0.05, 0.10 and 0.15% DSM as compared to the groups received control diet and 0.20% DSM.

4- There was no significantly improvement in feed conversion for the tested diet as compared to the control group.

5- Protein intake and energy intake were increased for chicks fed diets containing DSM as compared to the control group but these increases were not significantly ($P<0.05$).

6- Protein efficiency ratio and energy efficiency ratio were not significantly influenced by DSM additions as compared to the control group.

7- The inclusion of DSM as feed additives to the diet of broiler chicks had no effect on any of the carcass traits studied, except for significant differences were observed for pancreas and spleen.

8- Mortality rate was not significantly affected by treatments.

The Second Experiment:

One-day-old seventy two Hubbard broiler chicks were randomly assigned to four groups. In each group the chicks were divided into three replicate, the experiment period lasted for 8 weeks of age. The groups were received diets containing different levels from DSM 0, 2, 4 and 6%. At the end of the experiment 3 chickens from each group were slaughtered and the carcass characteristics and organs were determined. The results obtained of this experiment could be summarized as follows:

1- Body weight of group received a diet contain 2% DSM did not different from those fed the control diet. While, the difference were highly significant among groups received 4% and 6% and the control at 4, 6 and 8 weeks of age.

2- Body weight gains of broiler were significantly ($P<0.01$) affected by diet composition at all ages intervals except for 6-8 period, broilers fed diets containing 2% DSM did not differ from the control group, other levels showed step down decrease as compared with the formentioned groups.

3- Increasing DSM in broiler diets above 2% significantly decreased feed consumption. Broiler chicks fed the 4% and 6% DSM consumed significantly less feed than the other groups especially during 0-2, 4-6 period.

4- There was no significant difference in feed conversion of broiler fed diets containing 2, 4, 6% and that of broiler receiving a diet free of DSM all age intervals studied except for feed conversion during 2-4 weeks of age.

5- There was no significant difference for the whole period from 0-8 weeks in protein intake of broilers fed diets containing 2, 4, 6% DSM and these fed the control diet although protein intake tend to decrease with increasing DSM percentage in diets.

6- Protein efficiency ratio showed significant difference at period from 0-4 weeks between control and other groups, but there was no significant difference from 4-8 weeks period between control, 2% DSM and 4% and 6% DSM. Energy efficiency ratio showed the same trend.

7- Data of the carcass yield, edible giblets and non edible giblets for broiler chickens showed non

significant differences between the various levels of DSM as compared to the control diet.

8- The results of the blood glucose level showed in significantly decreased with increasing DSM during 0-4, 4-8 periods.

9- There was no significant differences in total plasma protein between the three tested group when compared with the control group.

10- The results, noticed that, no significant differences in (GPT) between the three treated groups, when compared with the control group, while there was significant differences in (GOT) between the control, 2% DSM and 4, 6 DSM groups.

11- Dried snail meal as no affect on Ash, Ca, P and breaking strength of Tibia.

12- No significant differences were noticed for moisture, crude protein, ash and crude fat from breast meat of broiler chickens.

13- No significant difference in the water holding capacity between the treatment groups, although

there were significant difference in the shearing force between control and the other groups.

14- There were, no significant differences of dietary treatment on plasma Na, K, Mg, Ca and P content of broiler at 28 days of age, but there were significantly decreased in plasma Ca and K at 56 days of age.

The Third Experiment:

Thirty six, Hubbard broiler chicks were used in the experiment and randomly assigned to two groups. In each group the chicks were divided into three replicate, the experiment period lasted to 56 days of age. The first group receiving diet without DSM (containing bone meal) and the other group receiving diet with DSM as a calcium and phosphorus sources. At the end of the experiment 3 chickens from each group were slaughtered and the carcass characteristics and organs were determined. The results obtained of this experiment could be summarized as following:

1- Body weight of broiler chicks fed diets containing DSM was not significantly affected when compared to the

control group at 2, 4, 6 weeks of age, but there was significant effect at 8 weeks of age.

2- Body weight gains of broiler were significantly ($P<0.05$) affected by diet composition only from 4-6 weeks and 0-8 weeks period.

3- There was no significant difference in feed consumption of broiler fed diet containing DSM and that of broiler received diet without DSM at all age intervals.

4- The results indicated that, feed conversion was not significantly affected by using DSM as a minerals source at all age except feed conversion during 0-2 weeks of age.

5- The results of intakes of protein intake, energy, and their efficiencies showed no significant difference.

6- There were no significant differences between the group receiving DSM as compared to the control group for carcass yield, edible giblets and non edible giblets.

7- The results indicated that, the blood glucose level was significantly decreased with using DSM in the broiler diets only at 28 days.

8- Plasma total protein of broiler receiving DSM as a minerals source at 28, 42 and 56 days did not differ among the experimental groups.

9- The results showed, no significant difference in tibia analysis, water holding capacity and shearing force.

The Fourth Experiment:

Forty eight, Hubbard broiler chicks were randomly assigned to four groups. In each group the chicks were divided into three replicate, the experiment period lasted from 1 to 4 weeks of age. The groups were received diets containing different levels from DSM to replace 2, 4, 6% from the basal diet. The results obtained of this experiment could be summarized as following:

1- Body weight and body weight gain of broiler chicks fed diets containing different levels of DSM did not differ for the control group. Feed consumption and feed conversion showed the same trend.

2- The results showed no significant difference in protein intake and energy intake of broiler fed diets containing DSM and those fed the control group.

3- There were no significant differences in protein efficiency ratio and energy efficiency ratio form broiler fed diets containing DSM and these fed diet containing the control group.