

## OBSERVATIONS ON BEHAVIOUR AND FEED INTAKE OF CHICKENS KEPT ON FREE RANGE IN MUY MUY, NICARAGUA.

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### **Abstract**

To understand the feeding habits of free-range chickens, a study on the behaviour of local chickens kept free range was carried out in Muy Muy, Nicaragua. Local hens spend 46 % of the day scavenging for feed. Sixty two percent (62%) of that time was spent consuming weeds and insects. The average percentage of protein in crop contents was 11.5, indicating a sub-optimal protein consumption for genetically improved chickens.

**Key words:** free range, family poultry, feed intake, Nicaragua.

### **Introduction.**

As long as balanced concentrates are beyond the reach of the owners of family poultry, it is logical to keep chickens free-range. However, in contrast to the considerable amount of knowledge on the nutritional requirements of laying hens reared in intensive production systems, little is known about the feed intake of scavenging birds. In general, it is assumed that free-range chickens eat a lot of insects and other protein rich resources. Savory (1978) states that the contribution of invertebrates results in a feed intake that exceeds the crude protein requirements of young chicks. However, Huque (1999) found that, in Bangladesh, protein contents are always deficient, and dependent on season and location.

One approach for quantifying the feed availability has been the formulation of the SFRB (The scavenging feed resource base) by Roberts et al. (1992). It might be impossible to have a consistent idea of what scavenging chickens are eating, because the circumstances differ from place to place, but, on the other hand, more knowledge of the menu would provide tools to develop supplements that could help optimise their egg production.

To understand the feeding habits of free-range chickens, a study on the behaviour of local chickens kept free range was carried out in Muy Muy, Nicaragua.

### **Material and methods.**

Five local laying hens were selected at the homesteads of five families living in the rural area of Muy Muy, Nicaragua. The activities of these five hens in each of the five backyards were classified and recorded during the month of May 1995. The type of activity being conducted was recorded at 15-minute intervals for a period of 12 hours once a week for five weeks. If the birds were observed to be eating, the type of food item being consumed was noted.

At the end of the monitoring period the chickens were slaughtered, and the contents of the crop dried and analysed. Chickens were caught and slaughtered between 10 AM and noon, after having scavenged since daybreak.

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## Results

The data on time spent on specific activities and on eating different types of feed are presented in tables 1 and 2.

Table 1: Percentage of time spent on specific activities during 12 hours

Activity	Time spent (%)
Eating	38
Laying eggs	9
Walking	8
Scratching	8
Resting	33
Drinking water	4

A distinction was made between "scratching" and "eating", although, in most cases, when the chickens were eating they were also scratching. Only in those cases when the hens were scratching without a clear indication that they were feeding was the activity recorded as "scratching"

Arguing that scratching is done to look for feed, the hens were observed to spend 46% of the 12 hours scavenging for feed.

Table 2: Percentage of time spent eating different type of feeds

Type of feed eaten	Time spent (%)
Weeds	25
Fruits / Vegetables	4
Insects	37
Faecal material	6
Grains	16
Miscellaneous	12

The average percentage of protein in the crop contents was 11.5.

**Discussion.**

An average of 11.5% protein in crop contents is similar to that (11.2%) reported by Roberts et al (1992). It is higher, however, than the 7.31 - 9.16% reported by Huque (1999). Overall crude protein content is considerably increased by the intake of insects and weeds, because in the same area it is recorded that hens consumed 92 grams of maize daily (de Vries, 1995). Although a protein level of 11.5% might be enough for local hens to achieve maximum production, (Gunaratne,1999) it still indicates sub-optimal protein consumption for genetically improved layers to achieve maximum egg production.

Supplementation with a protein concentrate could, therefore, be beneficial to hybrid layers on free range receiving maize grains. This is supported by data collected in Muy Muy at the homestead of one family that kept hybrid layers free-range. The birds were receiving rice bran, maize, meat scraps and limestone in a feed-bar. The data give the impression that, given the opportunity, the layers will increase their protein intake (up to 13%).

The challenge is to investigate what amount of protein has to be supplemented, and when to give it.

**Conclusions:**

1. Local hens on free range spent 46 % of the time looking for feed: eating (38%) and scratching (8%).
2. Of the time spent on eating, 37% and 25% were spent consuming insects and weeds respectively.
3. Although free-range chickens spend a lot of time eating insects and weeds, the overall protein content of 11.5% is still sub – optimal for improved layers.

**Recommendation:**

- Whether providing small amounts of protein supplement can increase the production of hybrid layers on free range should be explored.

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**Literature**

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