SUGGESTED RESEARCH ON EATING BEHAVIOR IN CHICKENS

For the sake of convenience the topic may be broken down into three categories:

A. Physical properties of the feed,
B. Feeding conditions,
C. Properties of the chicken.

A. Physical properties of the feed. How does a chicken discriminate between feeds? How do they discriminate between feed and non-feed (saw-dust, rocks, etc.)? There is considerable experimental evidence to show that if the senses of taste and smell exist at all in chickens, they are poorly developed.[1] There are, however, other physical properties on the basis of which discriminations could be made:

1. Specific gravity (density)
2. Hardness
3. Surface texture
4. Color (hue, saturation, and intensity)
5. Light reflecting properties
6. Size
7. Combinations of these

After isolating the controlling factors, one would hope to be able to give to a manufactured feed such physical properties as to cause greater consumption. By an optimal combination of physical properties it may be possible to make a less "palatable" feed as desirable as the most preferred feed. Also, it may be possible to improve on nature by developing a feed that is more attractive than any natural feed.

B. Feeding conditions.

1. Intermittent feeding. Our experiments have shown that a hen may consume her full daily ration at one time when fed once a day. On the other hand, it is common practice to let chickens eat ad libitum. How would food consumption vary for intermittent feeding schedules between these two extremes?

2. Variable pay-off. What would be the effect of having an automatic hopper deliver less than a full round of feed (i. e., with a group of, say, 12 hens, the hopper would deliver on the average only 8 pellets or grains)? Such a set-up should promote competition for the available food. Would this result in greater food consumption? What would happen to the more submissive chickens?

3. Self-operated feeder. What would be the effect of a feeder which the chicken operated by some simple response such as pulling a string? (Training could be automatic.)

4. Stimuli correlated with presentation of food (discriminative stimuli).

   a. Stimuli which regularly precede the presentation of food eventually exert a marked influence on responses associated