

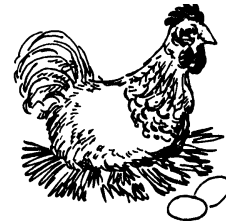


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COMMERCIAL EGG TIP . . .

IMPLICATIONS OF BIRD DENSITY REDUCTIONS: A NUTRITIONISTS PERSPECTIVE

Sooner or later, everyone involved in the commercial rearing of poultry comes to realize that a change made in one phase of the production process will almost certainly have implications on other aspects. It is thus reasonable to wonder what effect decreased cage density might have on flock nutrition. This decrease in density for white Leghorns, to 59 in² per hen in 2003 and reaching 72 in² in 2012, has been accepted by a large segment of the commercial egg industry. While feed is always a major cost of producing eggs, the increased grain and oilseed prices projected for the coming year make the issue even more relevant. What can be assumed from the outset is that the cage density changes currently being implemented will have no immediate drastic effects on feed formulation. However, we need to be cognizant of whatever subtle changes may occur in the nutrient requirements of our flocks so as to be fully aware of the *issues* to be considered and the *choices* we may be called upon to make. Several points should be kept in mind as the new densities are implemented.

1. Will strain performance change? If so, feed intake may also be affected, with possible modifications in nutrient levels. While any change in strain popularity is at this point speculative, it is suggested that the smaller framed hen will benefit less from reduced density than somewhat larger birds. It is theorized that strains of hens which do not reach their genetic potential for egg production under current density conditions may well become more competitive. Possible feed intake changes with such strains will necessitate a review of current nutrient levels.

2. Feed efficiency will almost certainly decrease. Most nutritionists agree on this point. In part, the decrease in efficiency will be due to the increased spillage of feed resulting from greater

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access to the feeder. Also, decreased hen density will permit greater opportunity for physical activity, this implying greater caloric expenditure on non-productive functions. The only scenario under which feed efficiency would not decline would be one in which egg production increases to more than offset feed wastage and increased movement.

3. House temperatures will decrease (in existing housing), probably leading to increased feed consumption, with a number of possible consequences. According to some, it will be increasingly difficult to control egg size and, in older flocks, shell quality. On the other hand, it may become easier to achieve early egg size. If the level of egg production remains constant, while feed intake increases, it may be possible to achieve some cost savings with modest reductions in protein, amino acids, and other nutrients. In one scenario, metabolizable energy levels would remain the same, with increased feed intake providing extra energy for physical activity. However, concern has been expressed by some industry figures that hens may overeat and thus develop excess body fat and fatty livers, along with a possible increase in mortality. On this point, honest disagreement can be found among experienced nutritionists. Some feel that metabolizable energy levels should be reduced (i.e., less fat, more fiber) to reduce the likelihood of excessive metabolizable energy consumption. The experience of others, however, is that such formula changes will only stimulate additional feed intake. It is possible that both points of view are valid, depending on the degree of temperature reduction. To confuse matters more, response to energy adjustment in the feed may well vary between houses, depending on outside temperature, degree of insulation, air movement and other factors.

4. Where to place low density cages? Any monitoring of house temperature will identify rows of cages with somewhat higher temperature than others. In order to meet short-term cage density goals, some cages in the house will have fewer birds than others. If these cages are placed in warmer areas of the house, it might be hoped that the increased environmental temperature would serve to buffer any increase in feed consumption.

5. Will increased feeder space lead to greater bird uniformity? In a given cage, one or more hens is frequently found to be of markedly lower body weight. This presumably reflects a lower degree of assertiveness in gaining time at the feeder. If such hens were to constitute 20% of a flock, it may well be that in order to achieve optimum production we have inadvertently overfed 80% of the birds in order to achieve satisfactory production from the more timid hens. If greater feeder space leads to improved body weight uniformity, we may in the future be able to reduce margins of safety on some nutrients in our laying hen formulas.

As is clear from the above discussion, we have a great deal to learn about the optimum management of flocks afforded reduced cage density. This is hardly the time to offer dogmatic solutions. Rather, it has been our objective to review how our feeding programs may (or may not) be affected by changes in cage density. In either case, we need to be alert to flock responses in order to modify existing programs so as to achieve optimum efficiencies of production.

Note: The suggestions of Dr. Steve Leeson, University of Guelph, Dr. David Roland, Auburn University, and Dr. John Kuhl of Nest Egg Nutrition are gratefully acknowledged.



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****Consult with your poultry company representative before making management changes.****