


Penn State

Poultry Pointers



Agricultural & Biological Engineering Agricultural Economics

DEFINING HOW MANY HENS TO PUT PER CAGE

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conducted to provide poultry managers a tool that will give them an economic edge for defining population sizes for various types of cages. The tool is decision analysis.

Decision analysis is an important technique that is used in large businesses for making strategic decisions. The decision analysis method is accomplished by listing the possible decisions that can be made, expressing the possible economic costs and returns for each type of situation, and determining the possible economic returns associated with each decision.

A key element that makes the poultry industry different from other businesses is that the potential profit is dependent on the biological responses of the bird to their environment. The biological response of the bird and the economic return under different economic conditions can be made into a decision table. With this table, a decision strategy can be developed.

The following example shows how a poultry manager can use decision analysis. In this example, it is assumed that the poultry manager wants to decide how many hens to place in a poultry house with a fixed number and size of cages during a coming laying cycle. It is assumed that the manager will purchase started pullets. The important factors that are needed are the number of eggs produced and feed consumed per cage for the population sizes to be considered in the decision. This information is probably the most difficult to obtain because it requires setting up an experiment involving each cage population density and recording the eggs produced and feed consumed per cage. These biological responses are important because they reflect how the environment affects the performance of the birds.

The next information that is needed is the projected economic conditions for egg prices and feed costs during the next laying cycle. From this information a decision table can be set up. The types of decisions to be made are based on the "risk" that a manager is willing to take. As each manager has a different ability to handle risk, the type of decision each is willing to make will probably be different.

In the research at Penn State, the situation of placing three, four, or five birds in a 12" by 20" cage was considered. It was determined that the populations would produce 56.1, 73.3, and 85.5 dozen eggs per cage and consume 198.8, 259.2, and 323.2 pounds of feed per cage, respectively. Based on the amounts of feed consumed and eggs produced, the profit potential (egg revenue minus feed costs) was determined for each economic situation and bird density. Managers may want to include other variables and fixed costs in the equation which are appropriate to their management situation.

A decision table was set up. Using decision analysis, it was determined that the best decision was to put four hens per cage in the next laying cycle. Although it may be difficult to visualize that fewer hens per cage can make more revenue, decision analysis objectively showed that under the economic situation considered, it was not profitable to consider putting five birds per cage. These results confirm the observations by Don Bell, a leading poultry specialist, that the extra bird put in a cage can be costly.

For further information on the decision analysis method and how it can be set up as a computer spreadsheet for your operation, contact Dr. W. B. Roush, 204 Wm. L. Henning Building, Penn State University, University Park, PA 16802, office: (814) 863-0655 or fax (814) 865-5691.

New Cow Prep

CAROLYN M. BURNS
PSU Vet Extension
STATE COLLEGE (Centre Co.) — Pre-dipping cows with a disinfectant prior to milking is considered an excellent method of milking prep. But unless the cows' udders are clean, pre-dipping may not lower bacteria levels on teat ends.

A new variation of pre-dipping has been developed by extension personnel at the University of

Minnesota. Although it's called the *one-step cow prep*, it uses a combination of washing the teats and pre-dipping.

Teats are sprayed or dipped with a sanitizing solution at the same time a gloved hand massages the teats and strips some milk.

The rubbing stimulates milk let-down and helps to remove dirt sticking to the teats. This should be continued until all dirt has been removed.

Teats are sprayed or dipped for a second time, and the teats are dried with a single-service paper towel 30 seconds later. The milking unit can then be attached.

One disadvantage to the one-step cow prep is the added time for prepping each cow for milking, but simulation of milk let-down has been improved by the massage, so cows are able to milk out in less time.

Milk bacteria counts are lowered because dirt and organic matter are removed from the teats.

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