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Comparing Alternative Laying Hen Breeds

Project Summary

This project was designed to determine the feasibility of raising alternative laying hen breeds in relation to their long-term egg production. Ideally, I would like to have a flock in which individual birds only need to be replaced every 4 to 5 years, whereas the popular Leghorn is typically replaced every 2 years. If my strategy proves successful, it will help diversify my farm operation and demonstrate to other farmers the potential benefits of raising alternative breeds. I think that pursuing this project is very important in order to offer farmers alternatives to the Leghorn laying hens. The ability to direct market a diversity of crops over an entire year is important to the success of my farming operation and for all sustainable farmers at large. I feel that it is important to investigate farming alternatives and acknowledge customer preferences.

Project Description

This study directly compares Leghorns with other chicken breeds to see if they can compete in terms of egg production over time. If they can, using alternative breeds may result in savings, as they require replacement less often, and so continue producing eggs for a longer time. Most egg-laying operations consist solely of commercial Leghorn breed

chickens, which must be replaced every 1 to 2 years. Other objectives include comparing the cost of egg production among the breeds and assessing customer preference for egg color.

Table 1. Layer Species Used in the Project

Breed	Egg Color
Buff Rock	Dark brown
Dorking (2006)	White
Aracauna (2007)	Green
Leghorn	White
Speckled Sussex	Light brown

The breeds I used are listed in Table 1. Speckled Sussex and Silver Gray Dorkings (Dorkings) are long-established European breeds, while Buff Rocks are a traditional American breed. They cost roughly 1.5 to 2 times as much as Leghorns, which originated in Italy. The Sussex and Buff Rocks are larger than the Leghorns and have a longer life expectancy. However, the Dorkings' egg production was so poor that I removed them from the project in the fall of 2006 and replaced them with Aracaunas, which lay green eggs.

*My cooperator son,
David Stanislow,
holding an Aracauna
chicken.*



I began the project on April 1, 2005 with one rooster and 15 hens each of the Buff Rock, Leghorn, and Speckled Sussex breeds. The Dorkings started with 14 hens. All of the birds were about 1 year old and already laying when the project started. To reduce the possibility of recording errors in monitoring egg production, I kept the birds in two separate pens inside a converted dairy barn. Each pen contained one white egg breed and one brown egg breed, along with a nesting box and roosting area. Speckled Sussex and Dorkings (later the Aracaunas) were housed in one pen, and Buff Rocks and Leghorns were housed in the other. My research indicated that there was not a significant difference in feed consumption among breeds, so this setup made daily chores easier. The hens were allowed to go outside when the weather was warmer than freezing, and they were given continuous and unlimited access to fresh water, meal feed, oyster shells, and grit (winter only).

I also researched different cost efficient feeding methods that are well tolerated by the chickens. I started off with a 17% protein, corn, and soybean meal mixture. In December of 2005, I switched to a 19% protein fish meal because the chickens did not seem to like the soybean meal. The change in protein content improved egg production rates in all breeds except the Leghorns. In 2006 I started mixing my own 19% bulk mixture. I bought the feed components directly from our local cooperative feed mill and a local farmer. Although the fishmeal blend was more expensive than the soy, I still saved money by blending it myself. When I first began, I was hoping to produce organic eggs, but the cost of the premixed feed and transportation were prohibitive; production costs exceeded egg revenue. It is not economically feasible for me to maintain an organic egg operation with my small number of hens.

Customer Egg Color Preference

In addition to looking at egg-laying longevity, I also wanted to investigate the effect of egg color on buyer choice. Through my research I found that my customers greatly preferred the brown eggs over the white eggs. (Although on the East Coast, white eggs are more popular because the brown eggs are what is in the store!) It is still too early

to have definitive information on preference between the green and white eggs, though it seemed that the green eggs were more popular once customers got used to them.

Results

The results of my project are provided in Figure 2. The Leghorns outlaid the Buff Rocks and the Speckled Sussex over the course of the project. Preliminary data on the Aracaunas indicated similar production to the Buff Rocks and the Speckled Sussex.

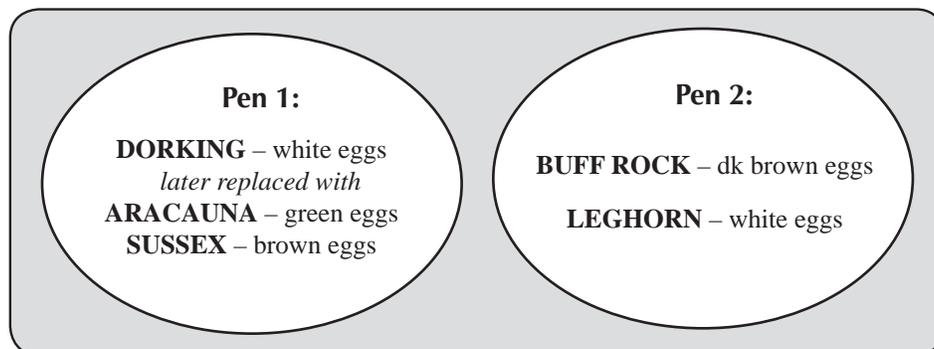
During March, 2007, the birds were attacked by a mink that got almost exclusively Speckled Sussex birds, but also fatally injured two Aracaunas. (The mink was eliminated by the resident rat terrier, “Milo,” but not before the damage was done.) We decided to butcher the remaining birds in April, because they stopped laying in February and did not restart as they had done in the previous 2 years. The value of the birds varied significantly with size, with the residual market value (after a \$2/bird processing fee) of the Buff Rocks and Speckled Sussex between \$3 and \$5/bird (at \$2/lb), and the Leghorns only \$1 to \$2/bird.

My overall favorite breed for a market operation was probably the Buff Rock, closely followed by the Speckled Sussex. Leghorns are so small that once they are done laying, they are barely worth cooking, so their residual value is negligible. They are also more sensitive to cold than the other, larger breeds. Plus, I have started hatching my own chicks, and the bigger breeds are heartier babies when hatched at home.

As a result of this project, we have decided that because of the intense competition among egg producers for egg buyers – both at the farmers’ market and at grocery stores – we plan to keep only enough hens as will lay eggs for ourselves, and we will then focus on more profitable markets—like duck eggs or guinea hens. I recommend having chickens as a small part of the farming operation (i.e., for yourself) or having at least 100 hens in order to make the time spent on the enterprise worthwhile—economically speaking.

Figure 1.

Pen Setup – To make it easier for us to track laying rates accurately, each pen housed one breed that lays brown eggs and one that lays white (or, in the case of Aracauna chickens, green) eggs.



I have found that consumers appreciate what I do on my farm and buy eggs from me because they know me personally. However, eggs are just one aspect of my farm operation. I also raise Tibetan yak, Icelandic and Shetland sheep, meat/dairy cross goats, potbelly pigs, Satin Angora, French Lop, and Holland Lop rabbits, llamas, and an alpaca. We also have a small market/herb garden and raise meat chickens in the summer. I am currently marketing my goods to the Foreston creamery and the St. Cloud Area Farmers' Market. I recently began selling my yak meat at the Mill City Market in Minneapolis, where there is a large consumer population that is interested in purchasing it.

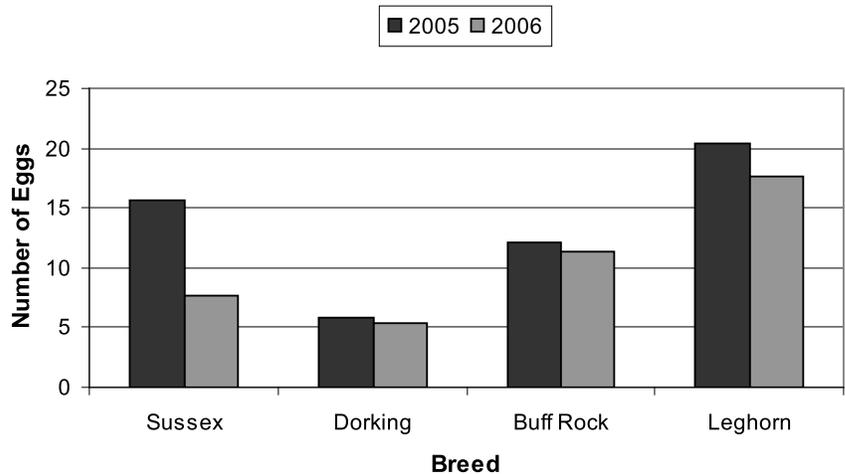
Management Tips

1. Artificial light is important to egg production, especially during short winter days. Fluorescent or incandescent lights can be used (they do not need to be bulbs that replicate the "daylight" spectrum), but use them consistently or the birds may stop laying.
2. Temperature does not appear to make a significant impact on egg production, but I suggest keeping the birds' living area above freezing.
3. Higher protein egg mash made a difference in egg production of some species, but had little effect on the Leghorns.
4. Pay attention to which eggs sell first; our farmers' market and direct market customers prefer brown eggs to white, and darker brown eggs over lighter brown eggs.
5. Guinea fowl are fairly effective for rat control, although if you can convince a cat to stay in the pen with the chickens, it is even better. Rat breed dogs are also effective, but they often like to eat the eggs.
6. I noticed that the Aracaunas and Leghorns are much more active than the bigger Sussex and Buff Rock breeds and benefit from being allowed outside. They also like to eat hay in addition to their regular feed.

Cooperator

David Staneslow, Foley, MN

Figure 2. Average Eggs per Bird per Month



Project Location

From US Hwy. 10 in St. Cloud go northeast on Benton Cty. 3 (approximately 20 miles). It will become Morrison Cty. 30 which comes to a "T", and then it becomes Morrison Cty. 26 or Nature Rd. Go right (east) at the "T". In approximately 1.5 miles the farm is on the north (left) side of the road. Sign says "Azariah Acres Farm."

Other Resources

American Pastured Poultry Producers Association. 6475 Norton Creek Rd., Blodgett, OR 97326, 541-453-4557, www.appa.org

ATTRA-National Sustainable Agriculture Information Service. Various poultry publications available free of charge in English and Spanish. 800-346-9140 or www.attra.ncat.org

Minnesota Department of Agriculture. 2005. Poultry Your Way. Available by calling 651-201-6012 or at: www.mda.state.mn.us (contains a chapter on pastured poultry and an extensive "Resources" section).

Salatin, Joel. 1993. Pastured Poultry Profits. Available from some libraries and booksellers and from Polyface, Inc., 43 Pure Meadows Ln., Swoope, VA 24479, 540-885-3590.

Sustainable Farming Association of Minnesota. Local chapters offer many field days and workshops. You can find your local chapter at: www.sfa-mn.org