

Hillendale Report

Effect of Enhanced Water on Hen Egg Production

Report Period: April 2000 to present

Location: Hillendale Farms, Lake City, Florida

Project Overview

Eddie Hazen of Hillendale Farms in Lake City Florida agreed to scientifically evaluate a Poultry Filter™ water filter and enhancement system provided by Wellness Enterprises, LLC. The system was custom built for Hillendale Farms for use with well water. Hillendale Farms is one of the top 12 largest egg producers in the USA with over five million hens. The top producer in the industry, Cal-Maine in Jackson, MS has 20 MM hens. There are approximately 40 producers in the US that have 1 MM or more hens. Market size of the top 40 egg producers in the US is approximately 186 MM hens.



Project Goals

The primary goal of this project was to validate reports from Japan which indicate that hens which are provided water from a Poultry Filter™ are able to profitably lay over 1000 days (vs. 450 in the USA), produce larger eggs with a slightly lower cholesterol content, thicker shells (lower loss to breakage), and more eggs per hen per week.

Testing Protocol

The following testing protocol was established prior to commencement of the evaluation period:

- A double blind study was employed utilizing two identical groups of hens divided into identical hen houses and provided the exact same type and brand of feed, medication, climate etc.
- A control group of hens was supplied standard non-chlorinated well water. The study group was supplied non-chlorinated well water that was enhanced with the Poultry Filter™.
- The study commenced on 21 April 2000 and ran for the initial lay cycle of 40 weeks. There was clear evidence that the hens significantly benefited from the Poultry Filter™ at the end of the initial 40-week lay cycle, therefore the study is being continued into the second lay cycle.
- If the study group hens are significantly more productive during the second lay cycle, the project may be extended until the productivity drops to an unprofitable level (generally, the quality and quantity of eggs produced by a hen diminishes rapidly in the latter part of the second lay cycle).
- Strict records on all variables such as feed consumption, mortality, and productivity have been maintained.

Project Details

Hillendale Farms filled two separate hen houses with hens from the same batch and the same breeder to ensure baseline consistency. Hen house number five was filled with 53,966 hens and designated the control group. Hen house number seven was outfitted with the Poultry Filter™ and was filled with 53,949 hens and designated the study group. Since both groups of hens were the same age, from the same batch and the same breeder, housed in identical hen houses with identical climate, and provided the same type and quality of feed, both groups are expected to produce the same quality and number of eggs per hen per day. Both groups of hens will be provided as much water and feed as they wish to consume.

All of the financial figures in this report were calculated on a per-hen basis for each study group.

Project Results

The Poultry Filter™ hens came into size quicker (produced larger eggs sooner) and more eggs over the period than the control group - there were also fewer fatalities in the Poultry Filter™ hen house.

After adjusting for cost of feed increase (since the Poultry Filter™ hens ate 62,940 lbs more feed) the hens consuming Poultry Filter™ water generated an additional \$4815 in gross profit or 8.925 cents more per hen in the first year of production.

The \$4815 in additional gross profit from the Poultry Filter™ study group in Hen House #7 represented 2.85% of the total gross profit of \$168,968 for that house and all of it went to the bottom line.

Specific Performance Results

First lay cycle - 43 weeks of production

Variable	Control Group Hen House 5 Regular well water	Study Group Hen House 7 Poultry Filter	Difference
Total eggs per hen	236.33	239.87	+3.54 eggs/hen
Mortality	3400 (6.3%)	2751 (5.1%)	19% reduction
Total eggs per house	12,753,540	12,940,992	187,452 additional

End of first lay cycle - no change in strength of shell. This was not unexpected since eggshells generally weaken with the age and cycle of the hen.

This report focuses only on the results from the first lay cycle. Results from the second lay cycle are expected late 2001.

Approximately 35% of the average egg producer's hen houses are in the second cycle at any given time. Due to the lack of data for the second cycle, the following financial projections have been adjusted to 65% of expected results to account for the low probability that the Poultry Filter™ will provide no beneficial effect during the second lay cycle.

Each hen in the control group contributed an additional 8.925 cents in gross margin. Adjust for 65% of the hens being in the first lay cycle at any given time (8.925 X .65) results in 5.801 cents of additional gross profit per hen on the farm at any given time.

Projected contributions to gross margin based on farm size:

Total Hens	No benefits in cycle #2	Equal benefits in cycle #2	Poultry Filter Cost 1 cent/hen/yr	Minimum Net to Farm	Expected Net to Farm
500,000	\$29,000	\$44,625	\$5,000/yr	\$24,000	\$39,625
1,000,000	\$58,000	\$89,250	\$10,000/yr	\$48,000	\$79,250
2,000,000	\$116,000	\$178,500	\$20,000/yr	\$96,000	\$158,500
3,000,000	\$174,000	\$267,750	\$30,000/yr	\$144,000	\$237,750
4,000,000	\$232,000	\$357,000	\$40,000/yr	\$192,000	\$317,000
5,000,000	\$290,000	\$446,250	\$50,000/yr	\$240,000	\$396,250
10,000,000	\$580,000	\$892,500	\$100,000/yr	\$480,000	\$792,500
20,000,000	\$1,160,000	\$1,785,000	\$200,000/yr	\$960,000	\$1,585,000

Summary

Initial data from the first lay cycle reinforces the data from current installations in Japan. From a biological perspective, there appears to be no reason the study group hens will not outperform the control group as well during the second lay cycle as they did in the first cycle. Test data from Japan indicates that second lay cycle may be extended more than 60 days with no significant drop in performance. In the event that the first or second cycle can be extended several weeks or a third lay cycle could be added, significant reductions in maturation and disposal costs will be realized.