

COOPERATIVE EXTENSION  
UNIVERSITY OF CALIFORNIA

RIVERSIDE, CALIFORNIA 92521

*Docket No.*  
*98-045N31*

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DATE: March 23, 2000

TO: Mary Harris  
The Food Safety and Inspection Service  
The Food and Drug Administration

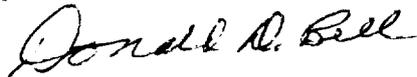
RE: Egg Safety Action Plan, hearing, Sacramento, CA April 6, 2000

Attached are copies of three items:

1. Letter dated Dec 21, 1999
2. Follow up letter dated Dec 23, 1999
3. Economic Impact of the proposed Salmonella Enteritidis testing and egg diversion program, US and California

I hope you will be able to enter these three items into the record for this hearing.

Sincerely,



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December 21, 1999

To Whom It May Concern:

The following comments are relative to the 28 page report issued on December 10, 1999 titled Egg Safety - An Action Plan.

1. First, I find it remarkable that this plan has many points that have not been part of the national dialog on the subject - particularly relative to the five suggested samplings.
2. I could find no recognition of at least two major Quality Assurance Programs - UEP's and California's (as if they didn't exist or aren't recognized as being up to the standards of other programs).
3. I was not aware that the writers of this proposal consider "all" cases of egg contamination the result of "transovarian egg contamination" (see page 8 of the report). I thought transovarian infection was considered only a portion of the problem, certainly not all! This dismisses all other means for eggs to become contaminated and eliminates the needs for processing and management procedures to curb infections other than temperature controls.
4. The President's address talks about 3.3 million infected eggs (which is calculated by dividing egg production by 20,000) which causes 300,000 illnesses.

First, I still question the procedure of determining the frequency of infected eggs when it was based upon the Pennsylvania epidemic data and then applied to the entire country.

Secondly, this appears to be a high ratio of illnesses when one considers:

- a. 30% of the 3.3 million eggs (1 million eggs would have been pasteurized.)
- b. the remaining would have to be mis-handled (under-cooked or eaten raw).
- c. they would have had to be eaten, in large part, by susceptible persons to the dosage levels found in the average infected egg.

What the data is showing us is that 10% of the infected eggs then become causes of salmonella problems and this assumes a -c above.

5. Page 8: "originally, the Salmonella contamination of shell eggs was believed to occur primarily when organisms present on the egg passed through the shell—", was this totally wrong? The following statement on the document seems to say so. Transovarian contamination now presents the same 1 out of every 20,000 eggs which means 100% are accounted for.

6. Page 8 (Human SE illnesses): "In 1997 alone, an estimated 300,000 infections may have occurred". The article had just got through saying "28,644 illnesses" (over a 14 year period). This appears to be at least a 140 times multiplier without an explanation for why the numbers are different?

7. Page 8: "54 of the 79 deaths (in 14 years) were of individuals in nursing homes". This is 68% of the deaths are in nursing homes where extremely fragile people reside and mortality rates, per se, are extremely high.

8. Page 8: "Northeast, where egg quality assurance efforts have been the most intensive (reduction in SE isolation rate)". Why then did California go up at the peak of Quality Assurance Program emphasis?

9. Page 9: Definition of under-cooked eggs appears to encompass a very high percentage of the way we eat eggs!

10. Page 9: Our layer population is not 300 million. In 1998 it averaged 255 million. The value of the laying flock is not \$1 billion: this would mean that the average bird was worth \$4.00. In fact, the average bird is worth \$1.00 over it's life. Therefore, the value of the layers in the US would be estimated to be \$255 million. Ask any appraiser of livestock and poultry.

11. Page 13: As I read this, testing would be done a minimum of 5 times over the life of a typical flock, not counting egg testing if positives are found. This appears to be a several-fold increase of what other programs recommend.

Sampling techniques are not discussed in the paper, but have been spelled out in other documents. One goes so far as to require 2 samples per cage row. If the average cage row has 2,000 birds, this would require 255,000 samples at each age (4) plus chick papers. We're talking in excess of one million samples per year (pooling?). Is this even feasible with our current laboratory system? Will it over-load our labs with a single emphasis?

12. I'm pleased to see that the authors have included education and research in their overall plan.

Sincerely,

Donald Bell

December 23, 1999

To Whom It May Concern:

It has been brought to my attention by one of our egg marketers that Option #2 of the New Egg Action Plan is being discussed as a viable option to testing when it really doesn't exist except in the research stages. I'm aware of several researchers working in this area and one or two pilot studies and several news releases as if it was an "off the shelf" item available to use today.

This marketer has already been approached by his supermarket buyer to find out why the company couldn't provide such eggs and I'm sure others in our industry will have the same problems explaining why their firms aren't using the latest technology.

It would appear to me that this is a case of "jumping at the gun" and that our individual companies will be put in a bad light if they don't respond affirmatively as their markets demand their eggs be pasteurized like the President told us they could be - as an option to an intensive testing program. I believe that UEP should formulate a response to this particular issue, with the help of the USDA or other agencies to explain just exactly where the "pasteurization in the shell" technology is and why it may take some time before it passes all the necessary tests and becomes a "viable" option. The industry shouldn't be forced into using a practice that is extremely expensive and which has not been fully tested as to its efficacy.

January 7, 2000

**ECONOMIC IMPACT OF THE PROPOSED SALMONELLA ENTERITIDIS TESTING AND EGG DIVERSION PROGRAM - U.S. AND CALIFORNIA**

This discussion is a very cursory examination of possible economic and social impacts resulting from mandatory testing or in-shell pasteurization relative to *Salmonella enteritidis* (SE) in commercial table egg flocks.

**Environmental Testing**

Periodic sampling of manure with drag swabs is proposed as a means of determining the presence of SE in commercial layer houses. The concept of row sampling (2 per row of indefinite length and representing a wide range of birds) is very poorly described and to many, scientifically unsupportable. The use of drag-swabs must be associated with an optimum dragging area for economic and scientific optimization.

It is estimated that we have a total of approximately 260 million laying hens in the US - 99% of which are in cages. Depending upon the definition of a "row", this could represent 130,000 rows with 2,000 birds each. Individual rows may differ by as many as 10 times depending upon the size of the house, the number of tiers included, and the density per cage. This, in itself, will result in a ten-fold difference in the intensity of sampling and therefore, the cost of the sampling will vary from farm to farm. Sampling must be associated with a given number of birds (manure), it must be true sampling (not all, but it should be at random). Regional differences in housing styles would place some regions at an unfair economic advantage because of the lack of more precise definitions.

It has been suggested that the number of samples over a flock's life (2 years) should be 4 and that each row should be sampled twice at each sampling. At this rate, it would require over 130,000 samples x 2 samples per row x 2 samples per year (4 total) or 520,000 samples per year.

- 1). This would entail the collection and associated costs of 520,000 samples per year.
- 2). This would involve the training of hundreds of technicians.
- 3). It would involve the use of laboratory facilities and staff and could adversely affect other work priorities within the lab.
- 4). The number of laboratory tests will depend upon the number of samples which are tested within a single pool.

If flocks were found to be "environmentally" positive, a series of additional tests (eggs) would begin with diversion of eggs away from traditional shell-egg markets to the breaker market. These tests will start with 480 or 1000 eggs per house and tested as pools of 20 eggs each. The commercial eggs from the environmentally positive house(s) must be diverted to an egg breaking and pasteurization facility for at least a six week period of time. If 4 consecutive egg tests (once per 2 week) are negative, the eggs can then be marketed in the traditional manner with additional sampling for the life of the flock. If any eggs are positive, the eggs must continue to be sent to the breaking plant and sample sizes are increased to 1000 eggs. A series of negative tests must occur before eggs can be declared negative and returned to the shell egg market.

The exact specifics of this program can be obtained from the CDFA and may be different in a national program.

**Costs associated with egg testing and diversion include:**

- 1). Each 480 egg sample has a farm value of approximately \$20.00 (varies with the time of the year)
- 2). Diverted eggs (breakers) have a lower value than table-eggs :

a). California and the US (not Mid-west) = a loss of \$.10 to \$.15 per dozen when eggs are sent to the breaker as opposed to a shell-egg packaging plant. For each week that eggs are diverted, a loss in income would occur for 0.42 dozen per hen x \$0.10 to \$0.15/dozen (4.2 to 6.3 cents per hen per week less income).

A 100,000 hen house, therefore, would lose \$4,200 to \$6,300 per week.

b). The mid-west region of the US (Iowa, Minnesota, Nebraska) would lose about \$0.05 per dozen because of different price relationships between their table egg and breaker markets.

Midwest Blend Farm Egg Price (1999) = 35.3 cents, Breaker Price = 31.1 cents.

difference: 4.2 cents

California Blend Farm Egg Price (1999) = 38.7 cents, Breaker Price = 27.5 cents.

difference: 27.5 cents

The length of the diversion period will vary depending upon the outcome of re-tests and egg tests. The number of tests would depend upon pool size.

### **Other Costs of Diversion**

Other costs include:

- 1). Need to purchase replacement eggs for existing customers.
- 2). Bad publicity to customers and general public. Effect on demand is unknown.
- 3). Permanent loss of customers
- 4). If packaged and still in cooler, an additional \$.20 per dozen in costs would be lost if eggs were diverted.
- 5). If destroyed, total losses would exceed \$.06 per egg plus the cost of dumping, etc.
- 6). In addition to this, loss of income during an empty period must be considered and the disruption in the flock age profile may result in additional losses.

### **Other Problems**

- 1). Identifying the specific source(s).
- 2). Possible need to include non-infected flocks due to inability to separate the scope of the problem.
- 3). What about the eggs that have already been processed - must they be diverted too? Who is responsible for these costs? This could represent as many as two weeks of production.

**In-Shell Pasteurization**

This technology is in the formative stages. There may be only one company involved with this process and I don't think it has been applied commercially with products available to customers.

It is certainly not a "viable" option at this time. It has not been commercially accepted, market tested with the public, or proven to be efficacious. No one knows whether or not the public will accept or pay more for this product.

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I hope this information will provide you with a little more background on the possible economic effects of a problem of this nature.

Since California represents approximately 10% of the industry, many factors can be calculated on this basis. Other costs and problems though, may be associated with the region.

Sincerely,

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