AN EGG ECONOMICS UPDATE

CALIFORNIA'S EGG INDUSTRY -- WHERE WE'VE BEEN, WHERE WE'RE GOING

During the past 35 years we've seen the California egg industry go through a period of rapid growth from 1958 to 1972, a disastrous disease epidemic in 1971 to 1973 which reduced our average flock size by about eight million hens, a period of flock rebuilding, and finally an -II-year period of flock cutback.

In 1950 our laying flock had approximately 18 million hens. It fluctuated between 18 and 21 million hens until 1958 when we started a 14-year growth period averaging 1.5 million new hens per year. By 1971, our flock had doubled and in December had peaked at 42,253,000.

In December of 1971, V.V. Newcastle Disease was discovered in Southern California. Commercial flocks were depopulated through 1972 and early 1973. By July of 1973, the state's flock had decreased to 33.7 million hens. Some of the depopulated farms chose to leave the business while others repopulated. A new high of 38.9 million hens was reached in November of 1974.

Between 1974 and 1985, we've seen the California flock shrink by 5.6 million hens or approximately 500,000 hens per year until in 1985 we averaged only 32.8 million hens. This 5.6 million fewer hens represents a reduction in our flock size of 14.6% from the post-Newcastle peak (Figure 1).

FIGURE 1. Changes in California's Human and Laying Hen Populations -- 1950 to 1985
During the same 35-year period, we've seen flock productivity increase from 192 eggs per hen in 1950 to 244 eggs per hen in 1985—an increase of 1.5 eggs per hen per year. This compounded the problem associated with the rapid growth of the flock during the 1960s. Our highest layer count was in 1971 but egg production peaked in 1980 with 3.8 million fewer hens.

Since 1974, California egg production has fluctuated back and forth between 8.0 and 8.8 billion eggs per year. The 1985 total of 8.014 billion eggs, though, represents a 5.7% reduction in egg numbers from the 8.501 billion eggs produced in 1974 (from 14.6% fewer chickens). The 1985 egg production figure is the lowest since 1966, except for 1973 during the Newcastle Disease epidemic.

In the years since 1950, California's human population has increased by 150% to its present 26.5 million. This represents an increase of over 400,000 new Californians each year.

**Per Capita Production and Per Capita Consumption**

During the 35 years being considered, national per capita egg consumption has dropped from 389 eggs to 255 eggs per person—134 eggs less. If we applied national egg consumption patterns to California, we can calculate the relationship of production to consumption (Figure 2).

![Figure 2. California Per Capita Production and Consumption of Eggs - 1950-1985](image)

- Includes 3%-5% hatching eggs. California egg consumption was assumed to equal the national rate.

In 1950 through 1958, California's egg production was deficit to our needs. By 1970, we were producing 419 eggs per person—85 more than the assumed consumption rate. The 1970 figure represented 36% surplus production. By 1975, this figure had risen to 43%—138 surplus eggs per person.
In recent years, thanks to our half-million hen cutback per year and our population growth, we're now producing only 45 eggs per person in surplus of California's needs (19%). A portion of these (3%) are used for hatching eggs, some are exported to other states, and some may disappear in higher rates of consumption.

Where to Now?

Conjecture about the future should be based upon well-established trends along with knowledge of major factors which may affect them. We would suggest that the longer a trend has existed, the probability will be greater for its continuation. The long-term trend in California's human population upward and the per capita egg consumption trend downwards would appear to have a strong chance of continuing in the present direction. Nothing appears on the horizon to make us predict a change in the trend line.

No major breakthroughs are expected to change the direction of the flock productivity curve. Breeders are steadily reducing the age of sexual maturity, improving livability, and increasing the persistency of production during the later stages of the flock's life. These gains will probably continue at the present 1.5 to 2.0 egg improvement per year for at least the next ten years. The breakthrough will occur if someone develops a strain of chickens capable of more than 100% production, or solves the problem of deteriorating egg shell quality after 60 weeks of age.

Will California's egg producers continue the eleven-year trend towards, a smaller flock? The trend appeared to be broken twice since 1975, (see Figure I), but then it continued downward.

Even though the 1985 flock averaged only 32.8 million, there are several indications that we may be on the verge of a new growth period. California poultrymen have had two years in the black (1984 & 1985) and many are considering modernization or expansion programs. California egg prices look attractive to out-of-state interests giving us the possibility of increased egg imports and/or capital investments within the state.

A 1984 survey of egg production facilities within the state showed 36 million layers in facilities with capacities totaling 43 million. This means that existing facilities were only utilized to 83% of their capacity. Higher egg prices or lower feed prices are both incentives to keeping houses full.

General Trends

Three major trends are occurring in the U.S. egg industry which will undoubtedly have considerable influence upon the profitability of this industry in the future. The first of these is the rapid consolidation of control by 50 to 100 firms. This control is essentially the control of the marketplace. Profits are shifted to the marketing arm of these organizations thereby reducing profits in production. This tends to eliminate the smaller producers who have no marketing profits.

Consolidation of the industry may have positive aspects as sounder business concepts are used. Boards of Directors may be less likely to hold on to low return facilities. Failure to receive a competitive return could make them look elsewhere for their investments.
The second trend that the industry is currently experiencing is the trend back towards ownership of facilities and away from contractual arrangements. Even though there is no common agreement that this will continue to completion, it does pose a serious problem as new facilities are built before old ones are retired.

An extremely large percentage of new facility construction occurring in the past five years has been in company-owned farms. This is being done to concentrate production, gain management efficiencies, improve technology, and to eliminate contract costs as a continuous cost of production item long after the debt has been retired.

The third trend is towards large complexes with large houses designed to reduce egg handling costs. Modern complexes are usually designed to effectively use the new 200 plus case per hour egg grading equipment--the 300 case machine is next!

The decision to initiate this type of project, without retiring older facilities, can increase local production to alarming numbers practically overnight. A new one million hen complex in California would increase this state's egg production by 3% and could have a seriously depressing effect on California egg prices.

Industry Trends for the Year 2000

By the turn of the century, California's human population should be approaching 32,000,00. If we assume that the rate of egg consumption decline will slow down to one less egg per person per year, we would project egg consumption to level off at 240 eggs per person by the year 2000. Flock performance gains will average 1.5 egg per hen per year for a gain of about 20 eggs per hen. Putting these three items together, we would project a need for 7.66 billion eggs or the production of 29 million hens. This figure would be larger if we continue to maintain or increase our exports of shell eggs and products or if we can successfully increase per capita consumption rates within the state.

California will continue as the number one egg state into the 21st century. Its remoteness from other production areas will continue to buffer it from lower egg pricing elsewhere. It must continue the trend toward a smaller surplus even at the risk of attracting some outside eggs from time to time.

California has many advantages that local egg producers can and must utilize. Our climate, transportation system, lifestyle, population concentration, and supportive services to the egg industry are all very essential to our continuing competitiveness.

We recognize that certain existing poultry areas within the state will probably phase out over time, but new areas will be found suitable for our industry. Also, individual firms are long overdue for modernization; this will take time and investment but, if done with careful planning, should guarantee them a competitive position for the foreseeable future.

Donald D. Bell, Poultry Specialist
Cooperative Extension Program
University of California
Riverside, California 92521