

EGG PRODUCTION
IN
NEW JERSEY



... a bit of history

*... why egg production
in New Jersey*

... interesting data

TO SERVE NEARBY
MARKETS

Eggs ... fresher by miles

BACKGROUND - NEW JERSEY INDUSTRY

With the advent of the commercial table egg industry, egg production in general, was located close to the market areas - hence, a major factor for the development of the egg production industry in New Jersey during the forties and fifties. During that period of time, New Jersey was one of the nation's major egg producing states and often referred to as the nation's "egg basket".

While the Garden State's egg industry was at its peak, significant technological developments occurred, mainly -- new types of management systems, automation, the need for larger production units, etc. Many New Jersey poultrymen, situated on small acreage (5 to 7) acres) and small flock size (3,000 to 7,000 birds), found themselves with antiquated farms and equipment, rapidly approaching a non-competitive position.

The South, meanwhile, looking for alternative opportunities in agriculture, quickly took advantage of the new technological developments, lower labor costs and established new, larger production units and became a significant factor in egg production - with our historic New Jersey/New York market becoming a major outlet for their production.

Shipping eggs over long distances (800 miles or more) did not appear to be a major factor as low transportation costs and other alleged advantages outweighed the hundreds of antiquated farms that were a major part of the New Jersey egg industry. With prevailing conditions at the time, New Jersey chose not to compete with the rapidly developing industry of the South! =

Currently, however, because of the development of new, large environmentally controlled houses, similar production costs in all major areas, high transportation costs in shipping eggs and/or corn the need to be competitive and other factors, the table egg industry -- in many parts of the country -- is re-evaluating its ability and reassessing its position to supply eggs to any given market. ***New Jersey is Now in Such a Position!***

In evaluating all relevant factors, it appears that it is a good policy to produce food (eggs) closer to the markets -- provided it can be done ***competitively*** and is ***compatible*** with the area.

Production and marketing costs - plus the availability of acreage for grain supplies as well as for the effective utilization of poultry manure as an organic fertilizer for corn production - will, to a large degree, determine where eggs will be produced.

**NEW JERSEY IS IN A FAVORABLE POSITION
TO MEET THESE CRITERIA**

WHY EGG PRODUCTION IN NEW JERSEY?

- ...**Nearness to Markets** - There is a trend among major egg producing areas, throughout the country, to gear their production to supply nearby markets. Nearness to market not only lowers transportation costs, but eliminates many problems inherent to long-distance shipping. Egg production units, however, must be competitive and compatible with the area. Since New Jersey is a deficit egg producing state, producing 13% of the state's egg needs and only 5% of the eggs consumed in the NY/NJ market area - it is in an excellent competitive position to produce high quality eggs (...eggs fresher by miles) for its nearby consumers.
- ...**The Preservation of Agriculture & Open Space in the Garden State** - A concerted effort is being made by state officials and others, and is supported by the general public, to keep agriculture in New Jersey for the benefit of its present and future citizens. Commercial table egg production is a desirable agricultural occupation as it provides nearby consumers with the best quality eggs possible - **JERSEY FRESH**. In addition, it supports other agricultural endeavors such as corn production, a major field crop in New Jersey, and maintains open space. It is interesting to note that each hen, during its production cycle, (producing 260 eggs plus) will consume approximately one bushel of corn. Organic fertilizer for this amount of corn can be produced by 5 hens - an excellent trade-off in the preservation of agriculture.
- ...**Highly Mechanized Industry (labor)** - Today's new egg production operations have excellent productive "output" in relation to labor "input". These highly automated production and processing systems provide excellent working conditions and require responsible, competent employees - a plus for any area.
- ...**Conservation of Energy** - Why transport eggs over long distances when they can be produced competitively in this area. A nearby source of food is a good "safety factor" for the consumers.
- ...**Stimulates the Economy** - A large, well-operate egg production complex will not only bring food (eggs) closer to the market, but will stimulate the economy in the area. It is estimated for every 100,000 layers approximately 2½ million dollars worth of business is generated in that area.
- ...**Egg Farming** - An excellent agricultural occupation in an urban/suburban/rural state such as New Jersey. New highly mechanized production and processing systems parallels the highly sophisticated industries that characterize New Jersey as an industrial/agricultural state.

THE RIPPLE EFFECT IN THE COMMUNITY

STIMULATES THE ECONOMY

It is estimated for every 100,000 layers there is approximately 2½ million dollars worth of business generated in that area, in addition to a marked increase in employment opportunities. This contributes greatly to economic stability and preserves agricultural lands.

EGG PRODUCTION UNITS
STIMULATE THE ECONOMY

100,000 LAYERS

2½ MILLION DOLLARS
CASH FLOW

MARKETS - Impact of a 100,000 bird unit for a twelve month production period.

EGGS - 26,000,000 eggs or 2,166,666 dozen or enough eggs to meet the egg consumption requirements of 110,000 consumers.

CORN - will consume over 110,000 bushels of corn, the corn production from approximately 850 acres.

FERTILIZER - will produce approximately 1450 tons of organic fertilizer which has a high plant nutrient value and is in demand for corn and vegetable production.

OTHER INTERESTING DATA

► PERTAINING TO THE EGG PRODUCTION UNIT

THE HEN'S PRODUCTIVE ABILITY

One hen will produce enough eggs (during its 12 month production cycle) to meet the per capita egg consumption of 1.1 persons.

NUTRITIONAL REQUIREMENTS

One hen will consume approximately 75 lbs. of a balanced ration consisting of 70% corn, 15% soybean oil meal and the remainder made up of other feed ingredients, such as wheat products, alfalfa, other protein supplements, minerals and vitamins. This plus 19 gallons of water per bird per year provides the nutritive requirements for high egg production.

THE BIRD'S ENVIRONMENT

FEATURES CONCERNING A 85,000 BIRD ENVIRONMENTALLY CONTROLLED EGG PRODUCTION UNIT - (Numbers may vary depending on manufacturer or type of system)

- ... Fans: 30, 40" to 48" fans
- ... Light Bulbs: 400
- ... Electric Motors, Other Than Fans: 50
- ... Feeder Chain: Over 3.5 miles
- ... Egg Belt Collector System: Approx. 3.5 Miles (+)
- ... Individual Water Fountains: 6,000
- ... Feed Requirements: Over 3,000 tons/production cycle
- ... Water for Production Unit Only: 155,000 gallons/year

Other Interesting Data, cont'd.

▶ PERTAINING TO EGGS IN GENERAL

U.S.A. PER CAPITA CONSUMPTION

	Pounds					Eggs
	Broilers	All	Turkeys	Beef	Pork	
1960	23.5	28.0	6.1	64.2	60.3	335
1965	29.6	33.4	7.5	73.6	54.7	314
1970	36.8	40.4	8.0	84.0	62.3	317
1975	36.7	40.1	8.5	87.9	50.7	274
1980	47.0	50.1	10.5	76.5	68.3	273
1985	55.5	58.0	12.1	79.1	62.1	255
1986	57.6	60.3	13.5	78.1	58.8	252
1987*	60.3	62.8	16.0	73.8	58.0	255

*projected -- Source: U.S.D.A. (F.S. 1/26/87)

NUTRITION INFORMATION/SERVING
(serving size=2 large eggs)

Calories.....	160
Protein.....	13 g
Carbohydrates.....	1 g
Fat (percent of calories-68%.....)	12 g
Polyunsaturated.....	1.4g
Saturated.....	3.8g
Sodium (130/100g).....	140g

Percentage of U.S. Recommended Daily Allowance (U.S. RDA)

Protein.....	30	Vitamin B ₆	6
Vitamin A.....	10	Folic Acid.....	15
Vitamin C.....*		Vitamin B ₁₂	15
Thiamin.....	6	Phosphorus.....	20
Riboflavin.....	20	Iodine.....	35
Niacin.....*		Zinc.....	10
Calcium.....	6	Biotin.....	8
Iron.....	10	Pantothenic Acid.....	15
Vitamin D.....	15	Copper.....	4
Vitamin E.....	6		
Magnesium.....	4		

*Contains less than 2% of U.S. RDA of these nutrients.

Source: AEB

BEST BUY ON EGGS

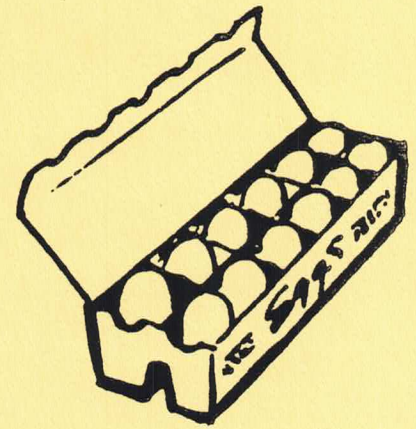
There are times when the price spread between different size eggs may vary considerably. A quick way to determine the "best buy" - just divide the price of large eggs by 8 and either add or subtract the result from the large price to determine an equal value between sizes. For example, large eggs at 96¢ ÷ 8 = 12¢. For equal value extra large should be \$1.08, large 96¢, medium 84¢.

MINIMUM WEIGHTS IN OUNCES & GRAMS

	ounces per dozen	ounces per egg	grams per egg
Jumbo	30	2.50	70.94
Extra Large	27	2.25	63.84
Large	24	2.00	56.75
Medium	21	1.75	49.66
Small	18	2.50	42.56
Pee Wee	<18	<1.50	<42.56

454 grams/lb.
28.375 grams/oz.

UNSCRAMBLING A DOZEN FACTS ABOUT EGGS!



Which came first ... the chicken or the egg?

It was the chicken--citing as the authority--the Bible:

"And the evening and the morning were the fourth day. And God said, 'Let the waters bring forth abundantly the moving creatures that had life and fowl that may fly about the earth and the open firmament of heaven.'"

Genesis 1:20

What is the difference between brown and white shell eggs?

Only the color of the shell. Color is determined by the breed of chicken. The coloring on the shell is the last thing the hen does in manufacturing the egg. Incidentally, it takes the hen approximately 24 hours to produce an eggs.

Is there any difference in the nutritional value between a fertile and infertile egg?

No. The only difference between the two is the germ spot (which is present in all eggs) is fertilized and that egg is considered a fertile egg. Under proper conditions for incubation, a fertilized egg can develop (in a period of 21 days) into a chick.

Are the eggs one buys in typical food stores usually infertile?

Yes. By far most of the eggs sold to the consumers are infertile. They are produced on commercial egg farms specializing in providing the consumer with high quality table eggs of uniform flavor.

Speaking of flavor--is there a difference? And what affects flavor?

There is a difference in flavor among different sources of eggs, depending mainly on what the birds are fed and how the eggs are handled. However, eggs from a given source are generally uniform in flavor. In fact, in any given dozen of eggs, yolk color and flavor are as uniform as "peas in a pod." This differs from the eggs in grandma's day in that chickens pecked around the barnyard and nutrition varied from bird to bird, resulting in a wide variation in yolk color and flavor.

What about the so-called "organic" eggs?

All eggs are organic? There are many eggs labeled and sold as "Organic Eggs" at handsome premiums, and in many instances, the quality may not be as good and the eggs are no different nutritionally from the ones you normally buy.

On a commercial egg farm--where are all the roosters? Aren't roosters needed for egg production?

Unfortunately for the rooster, NO. The major role of the rooster is to fertilize the ovum which results in a fertile egg for chick production.

What is the relationship of size to grade?

None. Eggs are labeled both as to size and grade. Size of eggs is based on minimum weight per dozen; for example: extra large (27 oz.), large (24 oz.), and medium (21 oz.). A dozen large eggs equals 1½ lbs. and, for example, at \$1.00/dozen the consumer is paying only 66¢/lb. for high quality protein food. In fact, egg protein is of such high quality, it is the standard against which the quality of other food protein is measured.

Grade is a quality designation such as AA, A, B, etc. Most stores do not carry Grade B eggs.

What is that stringy, white, cord-like substance in the albumen?

That is called the chalazae. It is a twisted strand of highly concentrated albumen. Its function is to support the yolk in the center of the egg.

What is the significance of yolk color?

It is mainly an indication of the bird's diet. Color can vary from a dark orange to a light lemon color--depending upon feed ingredients. Noodle manufacturers prefer a dark yolk, the consumer, in general, prefers a lemon colored yolk.

Why are hard-cooked eggs often so difficult to peel?

This problem is generally associated with the freshness of the egg--the pH of the albumen. Fresh egg albumen has a pH of approximately 7.7. After the egg is laid,

the pH of the albumen gradually increases. The degree of increase depends on storage conditions, length of storage and whether the shell has been oil treated to retard pH loss. For eggs to be easy to peel, the pH should be around 9 or a little higher.

What can the consumer do if peeling is a problem?

To make eggs peel easily, remove the eggs from the refrigerator and leave them at room temperature for 3-4 hours. This "warming-up period" permits more rapid escape of CO₂, thus raising the pH level. Placing eggs in cold water after they are cooked is also helpful.

What causes the gray-green discoloration of egg yolks in hard cooked eggs?

This is a chemical reaction of iron in the yolk and hydrogen sulfide from the sulfur in the white. This reaction can be minimized by avoiding overcooking and immersing eggs immediately in cold water.