

U.S. Egg Cost of Production and Prices

December 6, 2019



Compiled by
Maro Ibarburu

Sponsored in part by:



American Egg Board

The Egg Industry Center Market Reports & Industry Analysis are compiled in the memory of their creator, Don D. Bell, Poultry Extension Specialist Emeritus - UC Davis.

REPORT NOTE: This report estimates the average layer feed price and cost of production in six different U.S. regions as outlined on the following map. It also reports the EIC projected prices of eggs.

This report uses the corn and soybean meal prices reported by [USDA AMS Market News](#). Monthly corn and soybean prices for each region are estimated as the simple average of prices for the States with pricing information in each region (please see map below)

There is no price information for soybean meal in any of the Northeast States. Therefore, we estimate the soybean meal prices for the Northeast region based on the historical relationship with the Midwest price. The West region prices are estimated as the simple average of California and Oregon prices.

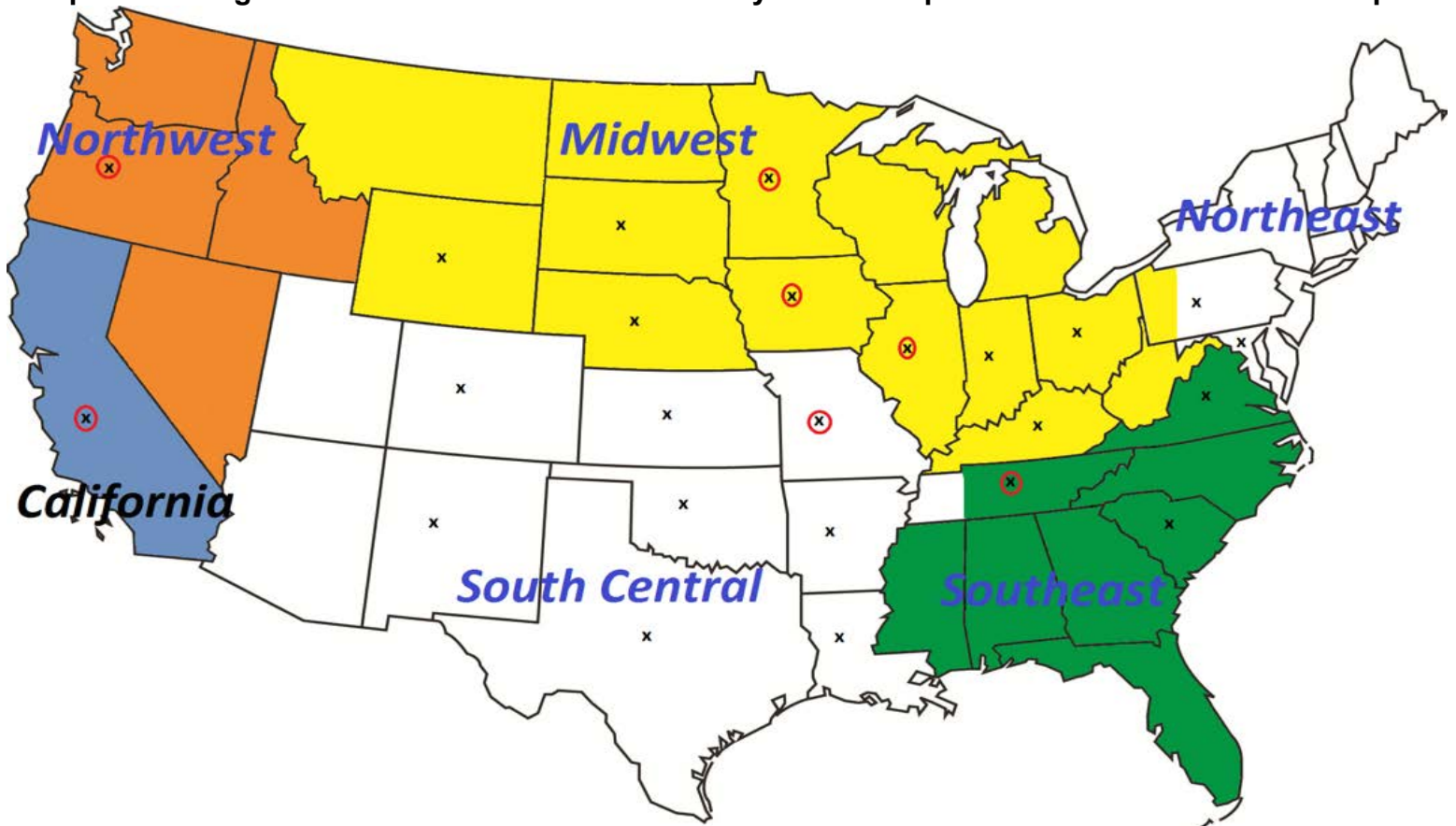
The average feed price is based on a diet consisting of 67% corn, 22% soybean meal, 8% limestone and 3% other ingredients.

The cost of production was adjusted from last year based on producer surveys. There is not enough information to separate costs by region other than using the differences in the feed ingredient prices.

Pullet cost are adjusted by region based on the average feed price for the month, assuming all the other costs are similar between regions.

Feed conversion is variable depending on the month. The labor, building and equipment, interest and miscellaneous costs are assumed to be 17.96 (cents/dozen) for all regions (except California) and months.

Map of U.S. Regions and the location of corn and soybean meal price information used in this report



Note: The X's mark the States with monthly corn prices reported by USDA.

The red circles with X's inside (ⓧ) mark the States with monthly corn and SBM prices reported by USDA.

**Highlights and comparison with previous month and previous year.
Prices and Percent Changes**

Difference with respect to November last year (2019 vs. 2018).

Corn Price (\$/ton)		SBM Price (\$/ton)		Feed Cost (\$/ton)		Cost of Prod (cents/doz.)		Egg Price (cents/doz.)	
+7.55	+5.4%	-3.97	-1.3%	+4.91	+2.6%	+1.48	+2.5%	+11.22	+11.7%

In November, corn prices were \$7.55/ton (5.4%) higher than in the previous year. Soybean Meal prices were \$3.97/ton lower than November last year.

These changes in prices resulted in a \$4.91/ton (2.6%) higher cost of feed and 1.48 cents/doz. (2.5%) higher cost of production than November last year.

The November 2019 egg price paid to producers was 11.22 cents/doz. (11.7%) higher than in November 2018.

Difference with respect to the previous month this year (November 2019 vs. October 2019).

Corn Price (\$/ton)		SBM Price (\$/ton)		Feed Cost (\$/ton)		Cost of Prod (cents/doz.)		Egg Price (cents/doz.)	
-2.27	-1.5%	-2.33	-0.7%	-2.03	-1.0%	-0.36	-0.6%	+57.84	+118.0%

The November corn prices were \$2.27/ton (1.5%) lower than the previous month. Soybean Meal prices were \$2.33/ton (0.7%) lower.

These changes in prices resulted in a \$2.03/ton (1.0%) lower cost of feed and 0.36 cents/doz. (0.6%) lower cost of production than last month.

The November 2019 egg price paid to producers was 57.84 cents/doz. (118.0%) higher than the previous month.

CORN PRICE BY REGION (\$/ton) - 2019

TABLE 1

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	146.70	148.04	125.86	135.69	171.83	145.62
Feb	150.50	148.90	135.54	135.78	177.57	149.66
Mar	145.14	148.26	124.44	133.19	185.05	147.22
Apr	141.17	146.85	122.48	130.37	176.58	143.49
May	147.71	152.62	129.06	134.57	177.16	148.22
Jun	170.90	171.28	152.23	157.32	195.16	169.38
Jul	166.50	170.39	152.25	155.87	200.97	169.20
Aug	145.50	156.43	133.56	134.48	177.51	149.50
Sep	138.97	145.03	128.03	130.39	171.27	142.74
Oct	148.71	149.56	134.47	138.39	182.40	150.70
Nov	147.68	146.48	131.37	135.79	180.85	148.43
Dec						
11 Month Avg.	149.95	153.08	133.57	138.35	181.49	151.29
Region/US avg.	0.99	1.01	0.88	0.91	1.20	

Source: USDA AMS Marketnews

Note: "5-Region avg" is the simple average of the NE, SE, SC, MW, and West regions.

SOYBEAN MEAL PRICE BY REGION (\$/ton) - 2019

TABLE 2

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	328.87	324.60	294.61	313.06	354.44	323.12
Feb	320.50	316.13	286.45	304.74	343.28	314.22
Mar	323.02	316.80	287.10	347.39	355.71	326.00
Apr	317.03	316.06	286.38	308.93	352.66	316.21
May	304.40	308.86	279.44	297.73	333.06	304.70
Jun	331.87	334.26	303.92	328.08	362.35	332.09
Jul	321.58	322.87	292.95	319.37	349.75	321.30
Aug	306.85	311.58	282.06	301.45	337.40	307.87
Sep	305.77	308.71	279.30	301.03	334.64	305.89
Oct	309.95	317.85	288.11	305.11	345.08	313.22
Nov	312.26	314.67	285.04	301.10	341.38	310.89
Dec						
11 Month Avg.	316.55	317.49	287.76	311.63	346.34	315.96
Region/US avg.	1.00	1.00	0.91	0.99	1.10	

Source: USDA AMS Marketnews

There are no reported soybean meal prices for any location in the Northeast. Therefore, it was approximated using the historical relationship between the Midwest and the Northeast prices.

Note: "5-Region avg" is the simple average of the NE, SE, SC, MW, and West regions.

ESTIMATED LAYER FEED COST BY REGION (\$/ton) - 2019

TABLE 3

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	200.06	200.02	178.56	189.20	222.52	198.07
Feb	200.76	198.73	183.25	187.43	223.91	198.82
Mar	197.73	198.45	175.95	195.08	231.66	199.77
Apr	193.75	197.34	174.48	184.73	225.31	195.12
May	195.35	199.62	177.36	185.08	221.39	195.76
Jun	216.93	217.72	198.28	207.00	239.89	215.96
Jul	211.72	214.61	195.87	204.11	241.01	213.47
Aug	194.41	202.77	180.96	185.84	222.58	197.31
Sep	189.80	194.51	176.64	183.00	217.79	192.35
Oct	197.24	199.55	182.90	189.26	227.54	199.30
Nov	197.06	196.79	180.14	186.64	225.69	197.26
Dec						
11 Month Avg.	199.53	201.83	182.22	190.67	227.21	200.29
Region/US avg.	1.00	1.01	0.91	0.95	1.13	

Source: Egg Industry Center. Estimated based on corn and soybean meal prices reported by **USDA AMS Marketnews** and all other costs total \$29.4/ton. ... these costs had been estimated as 1.025 * last year costs until we get a new COP survey

Assumptions:

	Diet Composition				Transport
	Corn	SBM	Calcium*	Other ingredients*	and Milling
Percent	67%	22%	8%	3%	Costs*
\$/Ton	variable	variable	4.8	13.2	11.4

* These are standardized costs

ESTIMATED 19-WEEK PULLET COSTS BY REGION (\$/bird) - 2019

TABLE 4

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	3.78	3.78	3.62	3.70	3.95	3.77
Feb	3.79	3.77	3.66	3.69	3.96	3.77
Mar	3.77	3.77	3.60	3.75	4.02	3.78
Apr	3.74	3.76	3.59	3.67	3.97	3.75
May	3.75	3.78	3.61	3.67	3.94	3.75
Jun	3.91	3.92	3.77	3.84	4.08	3.90
Jul	3.87	3.89	3.75	3.81	4.09	3.88
Aug	3.74	3.80	3.64	3.68	3.95	3.76
Sep	3.71	3.74	3.61	3.66	3.92	3.73
Oct	3.76	3.78	3.66	3.70	3.99	3.78
Nov	3.76	3.76	3.64	3.68	3.97	3.76
Dec						
11 Month Avg.	3.78	3.80	3.65	3.71	3.99	3.79
Region/US avg.	1.00	1.00	0.96	0.98	1.05	

Source: Egg Industry Center

Assumes: 13.9 pounds of feed consumed per pullet at variable prices to grow a pullet to 19 weeks of age (for all regions), pullet feed cost 7% more expensive than layers cost (because of higher nutrient requirements); chick cost = 83 cents/baby chick, moving cost = 16.4 cents/pullet, and other costs = 130 cents/pullet (for all regions) these costs had been estimated as 1.025 * last year costs until we get a new COP survey

Note: "5-Region avg" is the simple average of the NE, SE, SC, MW, and NW regions.



ESTIMATED PULLET COST BY REGION under 1-cycle systems (Cents/doz.) - 2019

TABLE 5

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	10.97	10.97	10.50	10.73	11.45	10.92
Feb	10.98	10.94	10.60	10.70	11.48	10.94
Mar	10.92	10.93	10.45	10.86	11.65	10.96
Apr	10.83	10.91	10.42	10.64	11.51	10.86
May	10.87	10.96	10.48	10.64	11.43	10.87
Jun	11.33	11.35	10.93	11.12	11.83	11.31
Jul	11.22	11.28	10.88	11.05	11.85	11.26
Aug	10.85	11.03	10.56	10.66	11.45	10.91
Sep	10.75	10.85	10.46	10.60	11.35	10.80
Oct	10.91	10.96	10.60	10.73	11.56	10.95
Nov	10.90	10.90	10.54	10.68	11.52	10.91
Dec						
11 Month Avg.	10.96	11.01	10.58	10.76	11.55	10.97
Region/US avg.	1.00	1.00	0.96	0.98	1.05	

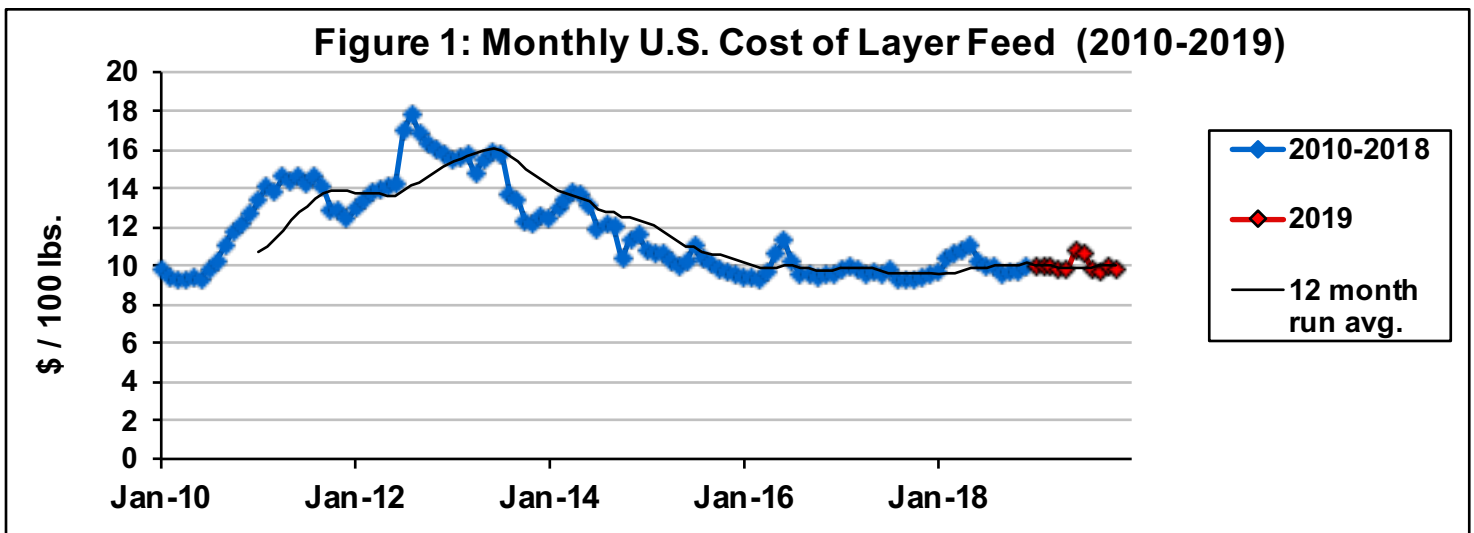
Source: Egg Industry Center Assumes 34.5 dozen eggs per pullet placed under 1-cycle systems

ESTIMATED FEED COST BY REGION under 1-cycle systems (Cents/doz.) - 2019

TABLE 6

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	31.41	31.40	28.03	29.70	34.94	31.10
Feb	31.52	31.20	28.77	29.43	35.15	31.21
Mar	31.04	31.16	27.62	30.63	36.37	31.36
Apr	30.42	30.98	27.39	29.00	35.37	30.63
May	30.67	31.34	27.85	29.06	34.76	30.73
Jun	34.06	34.18	31.13	32.50	37.66	33.91
Jul	33.24	33.69	30.75	32.05	37.84	33.51
Aug	30.52	31.84	28.41	29.18	34.94	30.98
Sep	29.80	30.54	27.73	28.73	34.19	30.20
Oct	30.97	31.33	28.71	29.71	35.72	31.29
Nov	30.94	30.90	28.28	29.30	35.43	30.97
Dec						
11 Month Avg.	31.33	31.69	28.61	29.94	35.67	31.45
Region/US avg.	1.00	1.01	0.91	0.95	1.13	

Estimated based on feed costs (\$/ton) shown in table 3, assuming 3.14 lbs of feed/dozen eggs



Note: "5-Region avg" is the simple average of the NE, SE, SC, MW, and NW regions.

ESTIMATED TOTAL COSTS BY REGION under 1-cycle systems (cents/doz.) - 2019 *

TABLE 7

Month	Southeast	Northeast	Midwest	South Central	Northwest	California	5-Region avg.
Jan	60.33	60.33	56.50	58.40	64.35	77.48	59.98
Feb	60.46	60.10	57.33	58.08	64.59	77.73	60.11
Mar	59.92	60.05	56.03	59.45	65.98	79.11	60.28
Apr	59.21	59.85	55.77	57.60	64.84	77.98	59.45
May	59.49	60.26	56.28	57.66	64.14	77.28	59.57
Jun	63.35	63.49	60.02	61.57	67.45	80.58	63.17
Jul	62.42	62.93	59.59	61.06	67.65	80.78	62.73
Aug	59.33	60.82	56.92	57.80	64.36	77.49	59.84
Sep	58.50	59.34	56.15	57.29	63.50	76.63	58.96
Oct	59.83	60.24	57.27	58.41	65.24	78.38	60.20
Nov	59.80	59.75	56.78	57.94	64.91	78.04	59.84
Dec							
11 Month Avg.	60.24	60.65	57.15	58.66	65.18	78.32	60.38
Region/US avg.	1.00	1.00	0.95	0.97	1.08	1.30	

Source: Egg Industry Center.

* These estimations are based on feed costs (cents/dozen) shown in table 6, pullet costs (cents/dozen) shown in table 5. Building and equipment, labor, interest and miscellaneous costs are assumed to be 17.96 cents/dozen (except for CA, please see below) Some assumptions were made in the absence of enough information of cost of production under the new California regulations. These assumptions that are a clear simplification of the changes in different costs are:

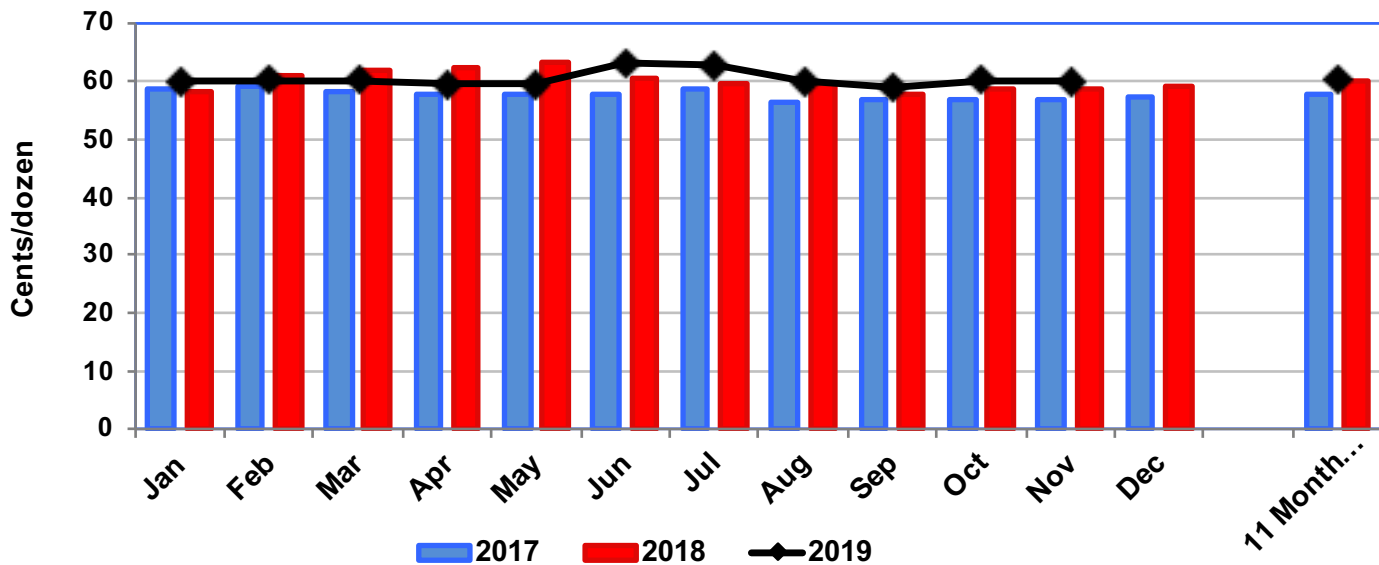
- 1) the feed efficiency and pullet cost are similar between California and the rest of the country
- 2) the "building and equipment, labor, interest and miscellaneous" costs are assumed to increase proportionally to the space per layer increase or 73% higher (116 in²/67 in²) than on the other regions which put them at at 30.33 cents/dozen (17.96 * 116/67)

These costs had been estimated as 1.025 * last year costs until we get a new COP survey

These estimations are based on standard costs for conventionally produced eggs. Higher labor costs might exist in certain regions.

Newer, more efficient farms, would probably use less labor but have higher equipment costs.

Figure 2: Cost of Production by Month



Note: "5-Region avg" is the simple average of the NE, SE, SC, MW, and NE regions. California is not considered for the average because of the different production requirements.

U.S. ESTIMATED FARM EGG PRICE AND RETAIL EGG PRICE (cents/Doz)

TABLE 8

month	Farm Price for All White Egg Sizes (cents/Doz)				Retail Price for Large White Eggs (cents/Doz)			
	2017	2018	2019	Change	2017	2018	2019	Change
Jan	49.5	95.0	78.0	-16.9	159.9	176.9	155.4	-21.5
Feb	38.9	120.7	69.8	-50.9	146.4	175.5	155.7	-19.8
Mar	46.6	184.2	60.7	-123.6	140.4	183.1	154.4	-28.7
Apr	42.7	118.4	39.7	-78.7	140.9	208.1	146.3	-61.8
May	37.1	65.1	23.1	-42.0	141.4	198.7	136.2	-62.5
Jun	39.5	76.8	38.5	-38.3	133.2	162.8	120.3	-42.5
Jul	50.9	94.4	29.7	-64.7	133.3	172.5	124.3	-48.2
Aug	55.7	85.8	57.6	-28.1	136.7	162.2	121.9	-40.3
Sep	83.5	73.4	57.5	-15.9	142.2	165.1	138.3	-26.8
Oct	78.6	81.1	49.0	-32.1	154.0	166.0	128.2	-37.8
Nov	109.1	95.6	106.8	11.2	150.6	159.6		
Dec	123.3	90.7			181.5	159.5		
Avg.	57.5	99.1	55.5	-43.6	142.8	177.1	138.1	-39.0
12 Month Avg.	62.9	98.4			146.7	174.2		

Source: Estimated using Urner Barry's price quotations by regions

Source: Bureau of Labor Statistics (Dept. of Commerce)

For this report, the price paid to producers for each size eggs is estimated by subtracting an "adjustment factor" from Urner Barry quotations of prices by region. The "adjustment factor" we are using varies around 42 cents/dozen and it is estimated by comparing the historical relationship between the Urner Barry prices with the Trailer Load prices reported by USDA.

The Undergrades eggs price is estimated as the price of Checks eggs as reported by USDA Marketnews minus 25 cents (up to a minimum of 8 cents) adjusted by the differences in prices between regions.

The average price of all eggs is estimated based on the proportions of Jumbo, Extralarge, Large, Medium, Small and Undergrades eggs. Based on the Breeders Performance Manuals up to 90 weeks of age.

Adjustment figures between Urner Barry quotes and producer prices are subject to change monthly and between regions and companies

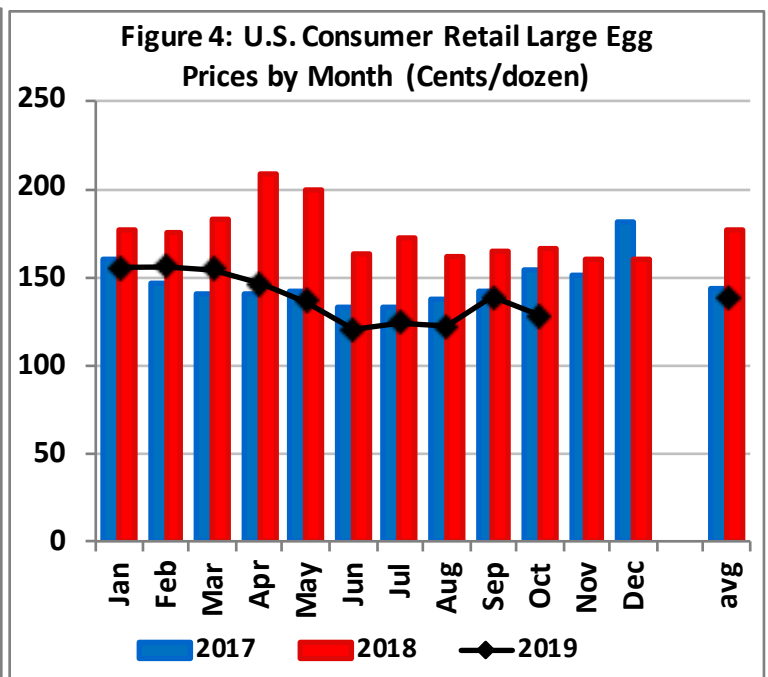
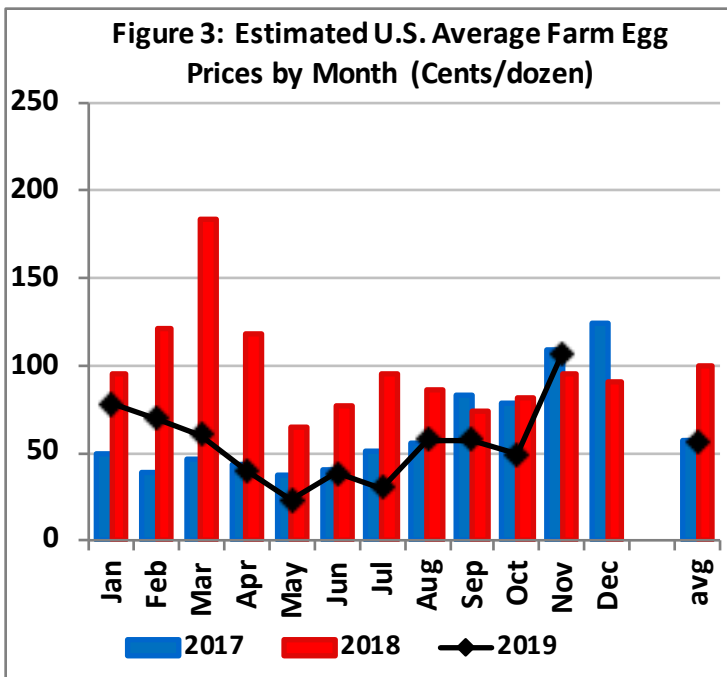


TABLE 9

ESTIMATED TOTAL COSTS comparing Breeders Manuals values vs. some loss in production efficiency (Cents/doz.) - 2019

month	Manuals	TOTAL Cost (cents/dozen)						
		5% higher feed conv. A	5% higher pullet feed B	lower eggs/ hen housed C	A and B	A and C	B and C	A, B, and C
Jan	59.98	61.53	60.03	60.38	61.59	61.94	60.61	62.16
Feb	60.11	61.67	60.16	60.52	61.73	62.08	60.74	62.30
Mar	60.28	61.85	60.34	60.69	61.90	62.26	60.92	62.48
Apr	59.45	60.98	59.50	59.85	61.03	61.39	60.08	61.61
May	59.57	61.10	59.62	59.97	61.15	61.50	60.19	61.73
Jun	63.17	64.87	63.24	63.60	64.94	65.29	63.84	65.54
Jul	62.73	64.40	62.80	63.15	64.47	64.83	63.39	65.07
Aug	59.84	61.39	59.89	60.25	61.44	61.80	60.47	62.02
Sep	58.96	60.47	59.00	59.36	60.51	60.87	59.57	61.08
Oct	60.20	61.76	60.25	60.60	61.82	62.17	60.83	62.39
Nov	59.84	61.38	59.89	60.24	61.43	61.79	60.46	62.01
Dec								
11 Month Avg.	60.38	61.95	60.43	60.78	62.00	62.35	61.01	62.58

Source: Egg Industry Center, based on [USDA Marketnews](#) published prices of corn and soybean meal

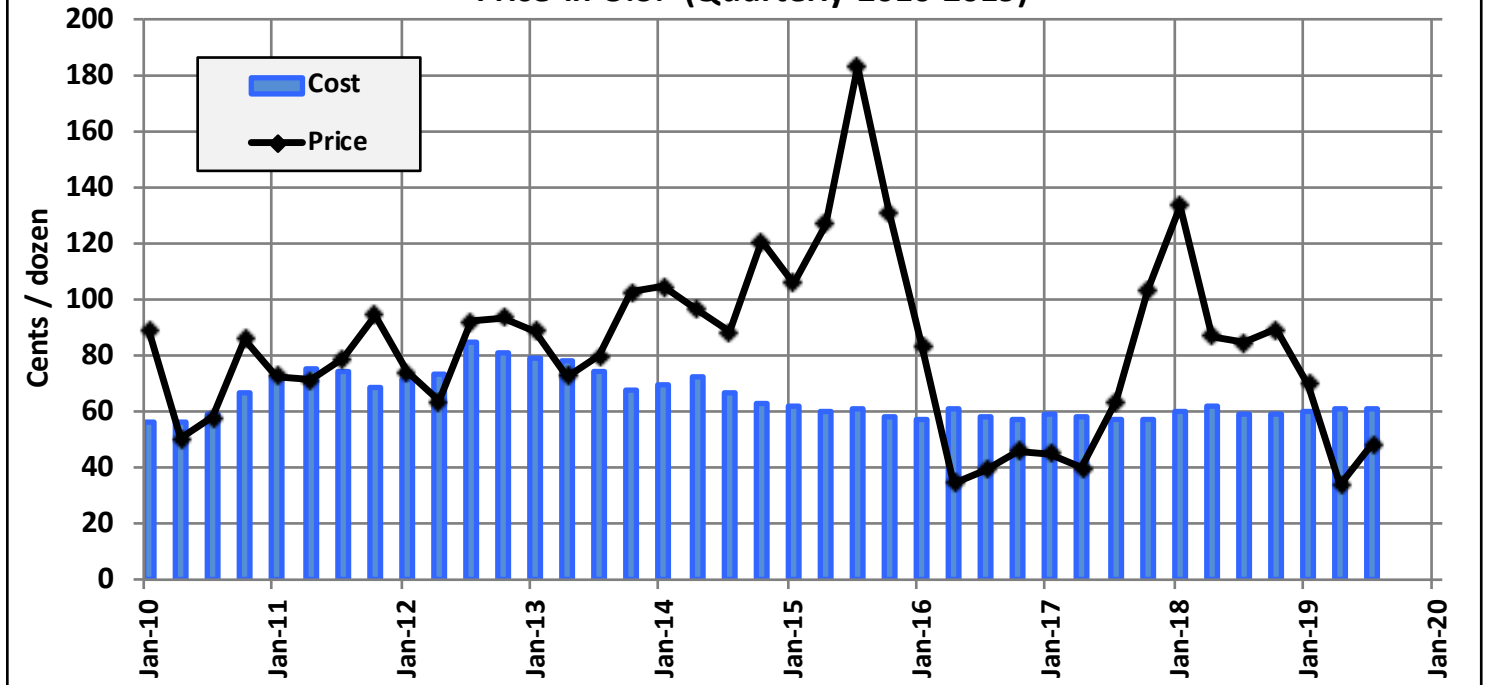
"Manuals" is estimated using the weighted average of Breeders Manuals (70% Hyline w-36, 15% Shaver White, 8% Lohmann LSL-Lite and 5% Bovans White) for 20 to 90 weeks of age.

"5% higher feed conv." is the estimated cost if the feed conversion were 5% higher than the breeders manuals value (using 3.30 lbs./dozen instead of 3.14 lbs./dozen)

"5% higher pullet feed." is the estimated cost if the feed used to grow pullets were 5% higher than the breeders manuals value (using 14.6 lbs./pullet instead of 13.9 lbs./pullet)

"lower eggs/ hen housed" is the estimated cost if the number of eggs per hen-housed were 5% lower than the breeders manuals value (using 394 eggs/hen-housed instead of 414 eggs/hen-house)

Figure 5: Estimated Cost of Production and Producer Non-Processed Egg Price in U.S. (Quarterly 2010-2019)



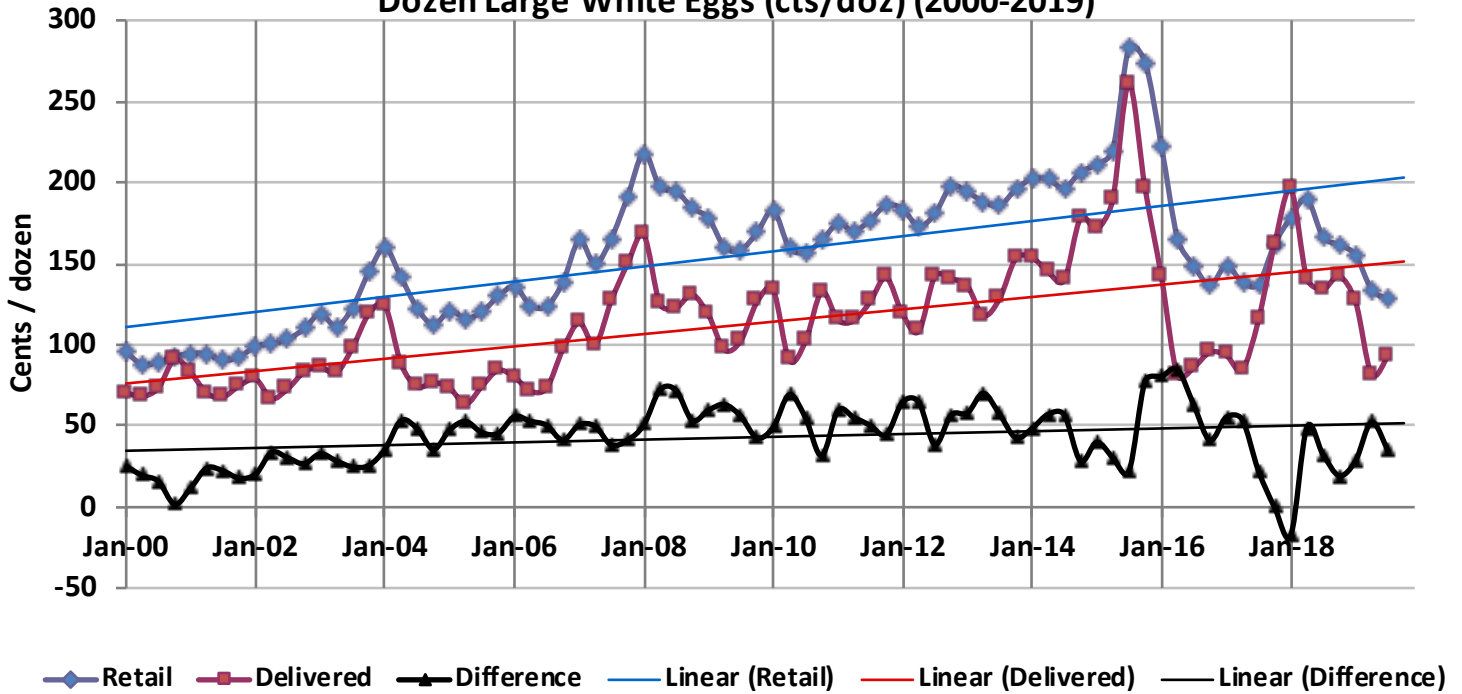
LARGE EGG PRICES - CONVENTIONAL (warehouse) AND CAGE-FREE (to 1st receivers) - (\$/dozen)

TABLE 10

month	Conventional White 4-Regions AVG		Cage-Free to 1st receivers			
	2018	2019	Contracting price		Negotiated price	
	2018	2019	2018	2019	2018	2019
Jan	1.26	1.13	1.60	1.56	1.89	1.52
Feb	1.61	1.14	1.60	1.56	1.88	1.62
Mar	2.14	0.91	1.60	1.50	1.88	1.47
Apr	1.86	0.74	1.60	1.56	1.76	1.19
May	0.99	0.50	1.60	1.56	1.12	missing
Jun	0.96	0.61	1.59	1.56	1.12	0.84
Jul	1.37	0.57	1.59	1.54	0.96	0.63
Aug	1.13	0.73	1.59	1.54	1.15	0.79
Sep	1.01	0.92	1.59	1.53	1.27	0.95
Oct	1.08	0.68	1.56	1.53	1.44	0.97
Nov	1.23	1.29	1.56	1.53	1.44	1.21
Dec	1.28		1.56		1.41	
11 Month Avg.	1.33	0.84	1.59	1.54	1.45	1.09

Source: USDA AMS Poultry Market News and Analysis
 Notes: the "Conventional Warehouse" is the simple average of white egg prices of 4-regions: MW, NE, SC and SE
 the Cage-Free price includes pricing for both white and brown cage-free eggs
 cage-free contracting price is cartoned while cage-free negotiated price is loose

Figure 6: Quarterly Retail Price and Delivered to Store Door Price for a Dozen Large White Eggs (cts/doz) (2000-2019)



Sources: U.S. Bureau of Labor Statistics for Retail Prices; and Urner Barry for Midwest Delivered to Store

Note: the delivered to store door price is estimated from the Urner Barry quoted prices as the 5- region simple average (Northeast, Southeast, South Central, Midwest, and Northwest). California is not considered for the average because of the different production requirements.

TABLE 11: U.S. CORN AND SOYBEAN PLANTINGS, HARVEST, AND UTILIZATION (2014 to 2018)

Year	Corn		Production Harvested (Million bushels)	Soybeans		Production Harvested (Million bushels)
	Planted (Million acres)	Harvest (Million acres)		Planted (Million acres)	Harvest (Million acres)	
2015/16	88.0	80.8	13,601	82.7	81.7	3,926
2016/17	94.0	86.7	15,148	83.5	82.7	4,296
2017/18	90.2	82.7	14,609	90.2	89.5	4,412
2018/19	89.1	81.7	14,420	89.2	87.6	4,428

Projections November, 2019

Projections November, 2019

2019/20+	89.9	81.8	13,661	76.5	75.6	3,550
----------	------	------	--------	------	------	-------

Utilization of Soybean for Various Purposes (Million bushels)

Year	Begin. Stocks	Production	Imports	Total Supply	Crush	Seed Feed & residual	% Crush of total	Exports	Net Use	Ending Stocks
2015/16	191	3,926	24	4,140	1,886	97	45.6	1,942	3,944	197
2016/17	197	4,296	22	4,516	1,901	105	42.1	2,166	4,214	302
2017/18	302	4,412	22	4,735	2,055	104	43.4	2,134	4,297	438
2018/19	438	4,428	14	4,880	2,092	89	42.9	1,748	3,967	913
2019/20+	913	3,550	20	4,483	2,105	96	47.0	1,775	4,008	475

Utilization of Corn for Various Purposes (Million bushels)

Year	Begin. Stocks	Production	Imports	Total Supply	Feed	(Fuel) *	Food & Industrial	Exports	Net Use	Ending Stocks
2015/16	1,731	13,602	68	15,401	5,114	5,224	6,648	1,901	13,664	1,737
2016/17	1,737	15,148	57	16,942	5,470	5,432	6,885	2,294	14,649	2,293
2017/18	2,293	14,609	36	16,939	5,304	5,605	7,057	2,438	14,798	2,140
2018/19	2,140	14,420	28	16,588	5,618	5,376	6,791	2,065	14,474	2,114
2019/20+	2,114	13,661	50	15,825	5,275	5,375	6,790	1,850	13,915	1,910

+ (forecast November, 2019)

* Fuel is included in the "Food and Industrial" category

	Feed	Fuel	Food & Industrial *	Exports	Ending Stocks
2015/16	33.2%	33.9%	9.2%	12.3%	11.3%
2016/17	32.3%	32.1%	8.6%	13.5%	13.5%
2017/18	31.3%	33.1%	8.6%	14.4%	12.6%
2018/19	33.9%	32.4%	8.5%	12.4%	12.7%
2019/20+	33.3%	34.0%	8.9%	11.7%	12.1%

* excluding the use for fuel

Sources Acknowledgements (double click on the links below and you can go directly to the source):

- USDA AMS Market News <https://www.marketnews.usda.gov/mnp/ls-home>
- USDA ERS Feed Outlook <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1273>
- USDA ERS Oil Crops Outlook <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1288>
- Urner Barry <http://www.ubcomtell.com/>
- Bureau of Labor Statistics <http://data.bls.gov/cgi-bin/srgate>
- USDA Cage-Free Shell Egg Report <https://www.ams.usda.gov/mnreports/pymcagefree.pdf>

Maro Ibarburu, EIC Business Analyst
Iowa State University, Ames, IA
Phone (515) 294-8132
E-mail: maro@iastate.edu



Don -
Thank you for all your contributions to this industry.
You will be forever missed.
Your friends at EIC