U.S. Egg Cost of Production and Prices

March 6, 2020

Egg Industry Center

Compiled by

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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.

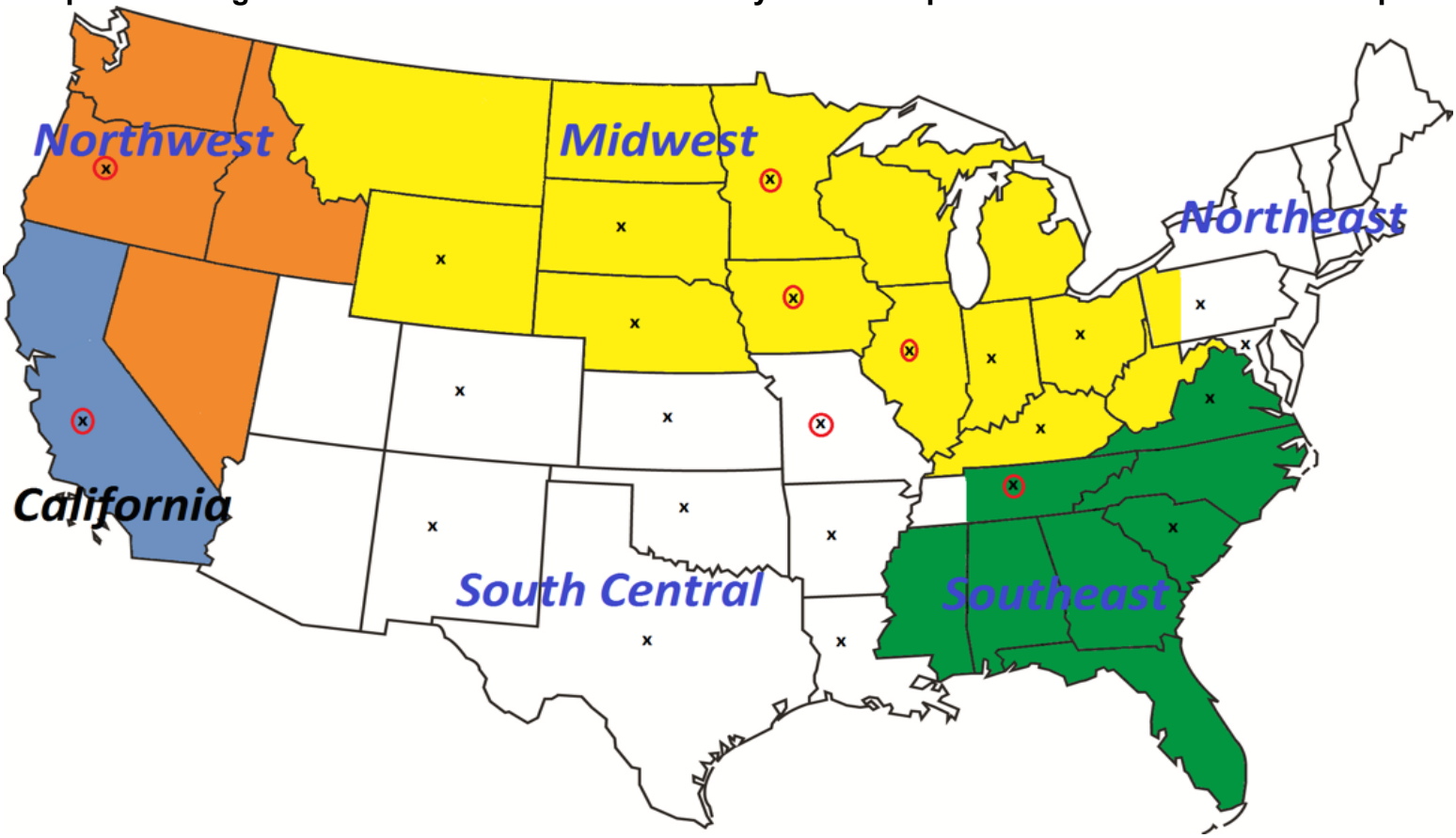
REPORT NOTE: This report estimates the average layer feed price and cost of production in six different U.S. regions as outlined on the following map. It also reports the EIC projected prices of eggs.

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 s 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 18.27(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 February last year (2020 vs. 2019).

Corn Price ($/ton)		SBM Price ($/ton)		Feed Cost ($/ton)		Cost of Prod (cents/doz.)		Egg Value (cents/doz.)	
+0.94	+0.6%	-9.52	-3.0%	-0.95	-0.5%	+0.26	+0.4%	-0.93	-1.3%

In February, corn prices were $0.94/ton (0.6%) higher than in the previous year. Soybean Meal prices were $9.52/ton lower than February last year.

These changes in prices resulted in a $0.95/ton (0.5%) lower cost of feed and 0.26 cents/doz. (0.4%) lower cost of production than February last year.

The February 2020 egg value to producers was 0.93 cents/doz. (1.3%) lower than in February 2019.

Difference with respect to the previous month this year (February 2020 vs. January 2020).

Corn Price ($/ton)		SBM Price ($/ton)		Feed Cost ($/ton)		Cost of Prod (cents/doz.)		Egg Value (cents/doz.)	
-2.11	-1.4%	-4.64	-1.5%	-2.43	-1.2%	-0.43	-0.7%	+16.02	+30.3%

The February corn prices were $2.11/ton (1.4%) lower than the previous month. Soybean Meal prices were $4.64/ton (1.5%) lower.

These changes in prices resulted in a $2.43/ton (1.2%) lower cost of feed and 0.43 cents/doz. (0.7%) lower cost of production than last month.

The February egg value to producers was 16.02 cents/doz. (30.3%) lower than the previous month.

CORN PRICE BY REGION ($/ton) - 2020 **TABLE 1**

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	153.19	152.24	135.54	140.03	182.50	152.70
Feb	150.67	150.77	133.38	137.90	180.25	150.59
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	151.93	151.51	134.46	138.97	181.38	151.65
Region/US avg.	1.00	1.00	0.89	0.92	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) - 2020 **TABLE 2**

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	310.63	313.67	284.08	300.13	338.20	309.34
Feb	302.96	308.25	278.85	293.95	339.49	304.70
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	306.79	310.96	281.46	297.04	338.85	307.02
Region/US avg.	1.00	1.01	0.92	0.97	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) - 2020 **TABLE 3**

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	200.91	200.94	183.24	189.78	226.61	200.30
Feb	197.53	198.77	180.65	187.00	225.39	197.87
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	199.22	199.86	181.94	188.39	226.00	199.08
Region/US avg.	1.00	1.00	0.91	0.95	1.14	

Source: Egg Industry Center. Estimated based on corn and soybean meal prices reported by USDA AMS Marketnews and all other costs total $29.9/ton. ... these costs had been estimated as 1.043 * year 2018 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	4.9	13.5	11.6

* These are standardized costs

ESTIMATED 19-WEEK PULLET COSTS BY REGION ($/bird) - 2020 **TABLE 4**

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	3.83	3.83	3.70	3.75	4.02	3.83
Feb	3.81	3.81	3.68	3.73	4.01	3.81
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	3.82	3.82	3.69	3.74	4.02	3.82
Region/US avg.	1.00	1.00	0.97	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 = 84.5 cents/baby chick, moving cost = 16.7 cents/pullet, and other costs = 132.5 cents/pullet (for all regions) these costs had been estimated as 1.043 * year 2018 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.) - 2020 **TABLE 5**

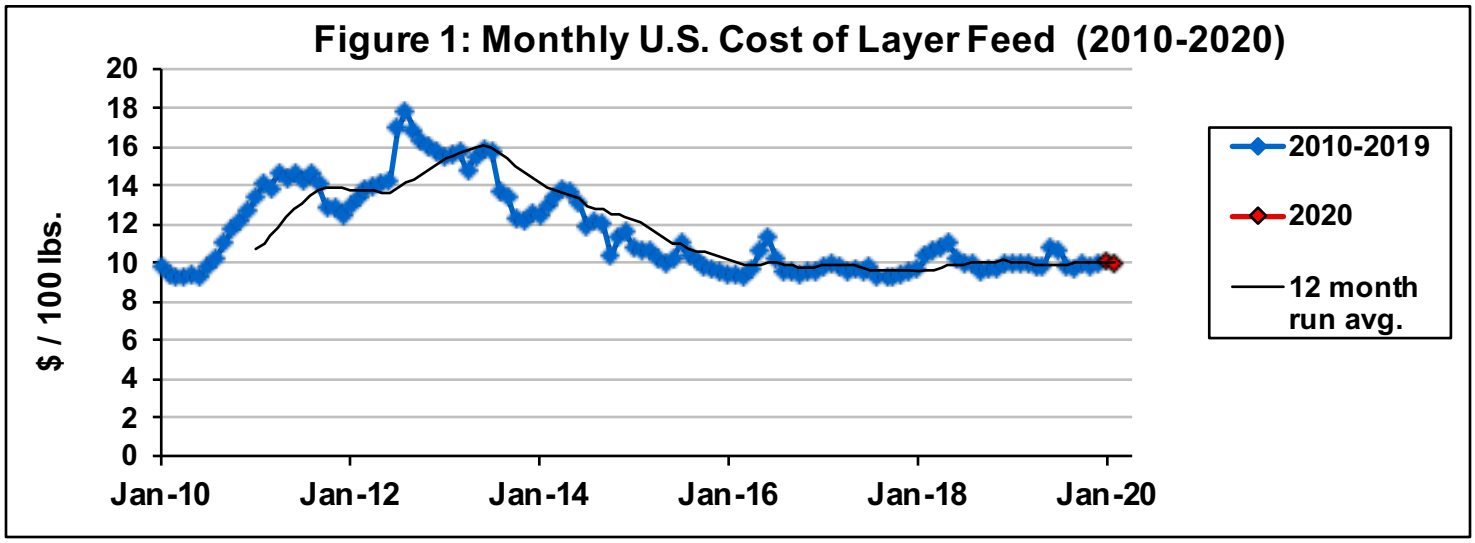
Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	11.10	11.10	10.72	10.86	11.66	11.09
Feb	11.03	11.06	10.67	10.80	11.63	11.04
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	11.07	11.08	10.69	10.83	11.64	11.06
Region/US avg.	1.00	1.00	0.97	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.) - 2020 **TABLE 6**

Month	Southeast	Northeast	Midwest	South Central	West	5-Region avg.
Jan	31.54	31.55	28.77	29.80	35.58	31.45
Feb	31.01	31.21	28.36	29.36	35.39	31.07
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
2 Month Avg.	31.28	31.38	28.57	29.58	35.48	31.26
Region/US avg.	1.00	1.00	0.91	0.95	1.14	

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.) - 2020 * **TABLE 7**

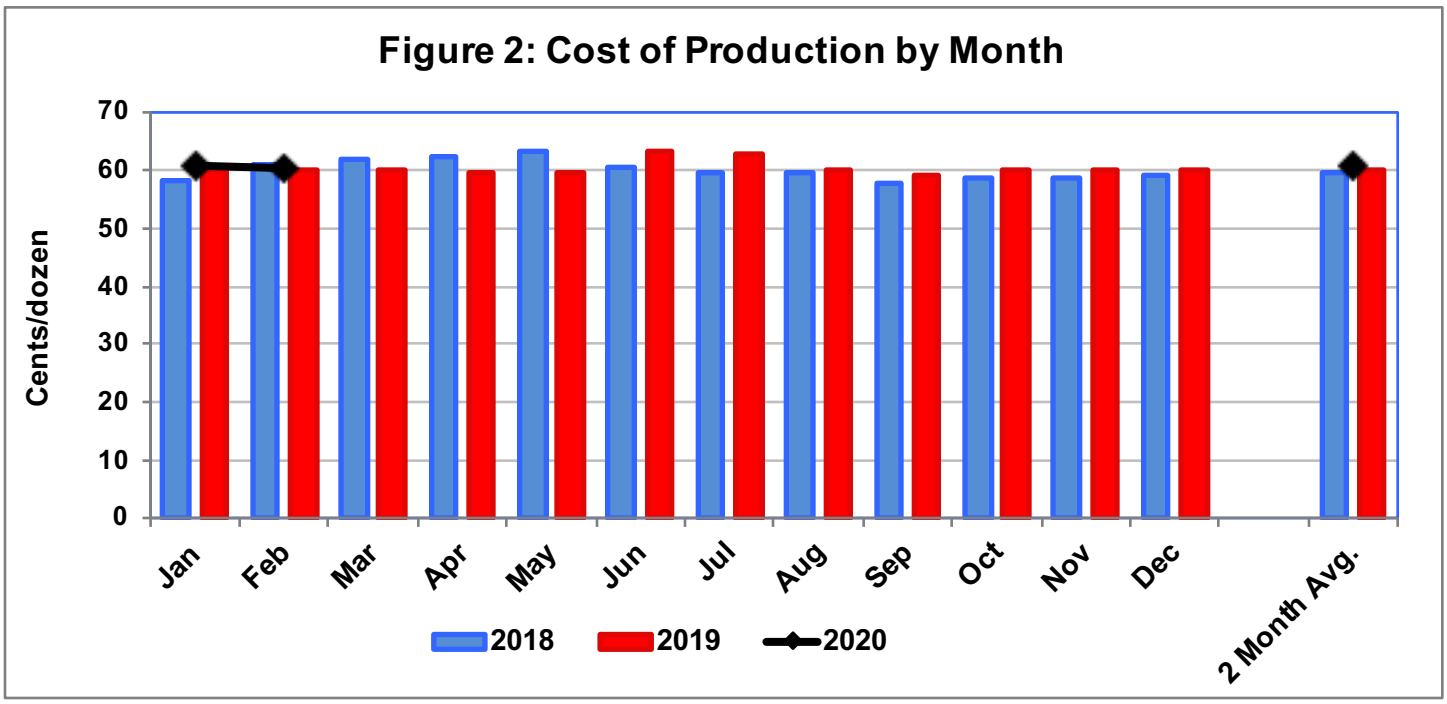
Month	Southeast	Northeast	Midwest	South Central	Northwest	California	5-Region avg.
Jan	60.92	60.92	57.76	58.93	65.51	86.51	60.81
Feb	60.32	60.54	57.30	58.43	65.29	86.29	60.38
Mar							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
2 Month Avg.	60.62	60.73	57.53	58.68	65.40	86.40	60.59
Region/US avg.	1.00	1.00	0.95	0.97	1.08	1.43	

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 18.27 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 115% higher (144 in^2/67 in^2) than on the other regions which put them at at 39.27 cents/dozen (18.27 * 144/67)

These costs had been estimated as 1.043 * year 2018 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.



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 Value for All White Egg Sizes (cents/Doz) 2018	2019	2020	Change	Retail Price for Large White Eggs (cents/Doz) 2018	2019	2020	Change
Jan	95.0	78.0	52.9	-25.1	176.9	155.4	146.1	-9.3
Feb	120.7	69.8	68.9	-0.9	175.5	155.7		
Mar	184.2	60.7			183.1	154.4		
Apr	118.4	39.7			208.1	146.3		
May	65.1	23.1			198.7	136.2		
Jun	76.8	38.5			162.8	120.3		
Jul	94.4	29.7			172.5	124.3		
Aug	85.8	57.6			162.2	121.9		
Sep	73.4	57.5			165.1	138.3		
Oct	81.1	49.0			166.0	128.2		
Nov	95.6	106.8			159.6	140.5		
Dec	90.7	81.0			159.5	153.5		
Avg.	107.8	73.9	60.9	-13.0	176.9	155.4	146.1	-9.3
12 Month Avg.	98.4	57.6			174.2	139.6		

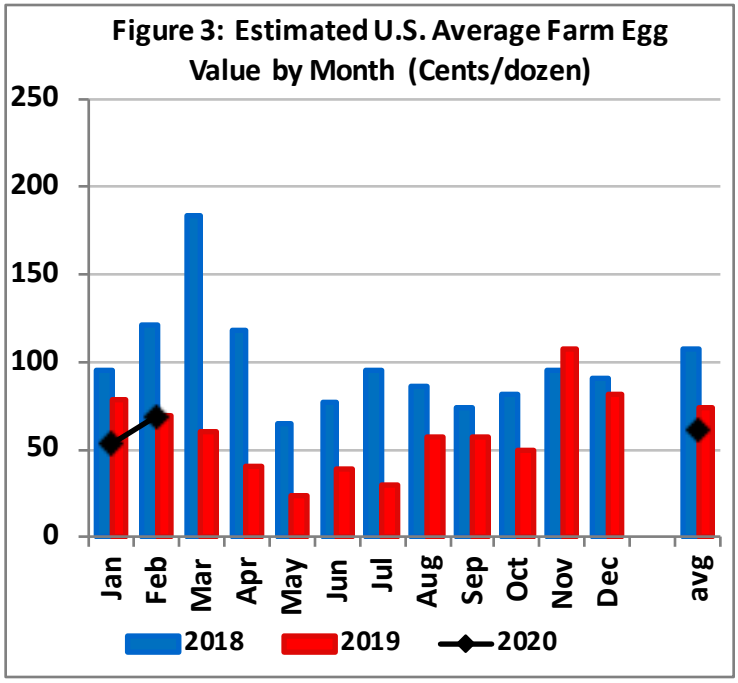
Source: Estimated using Urner Barry's price quotations by regions

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

For this report, the value 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 40.32 cents/dozen and it is estimated as the sum of the following costs estimated in the PCT study published in April 2019: carton cost + case cost + finishing cost + processing cost + cost of delivering to store door + loss from store returns + additional cost of USDA certification

The average price of all eggs is estimated based on the proportions of Jumbo, Extra-large, Large, Medium, Small and Undergrades eggs. Based on the Breeders Performance Manuals up to 90 weeks of age, assuming 5% check eggs and 1% loss.

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



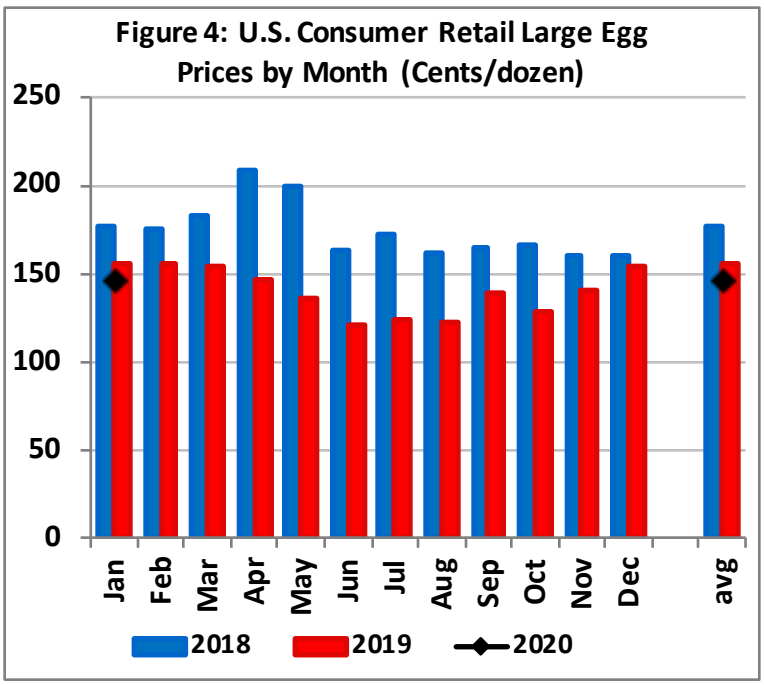


TABLE 9

ESTIMATED TOTAL COSTS comparing Breeders Manuals values vs. some loss in production efficiency (Cents/doz.) - 2020

month	TOTAL Cost (cents/dozen)							
	Manuals	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	60.81	62.38	61.03	61.39	62.60	62.97	61.62	63.19
Feb	60.38	61.93	60.59	60.96	62.14	62.51	61.18	62.73
Mar								
Apr								
May								
Jun								
Jul								
Aug								
Sep								
Oct								
Nov								
Dec								
2 Month Avg.	**60.59**	**62.16**	**60.81**	**61.17**	**62.37**	**62.74**	**61.40**	**62.96**

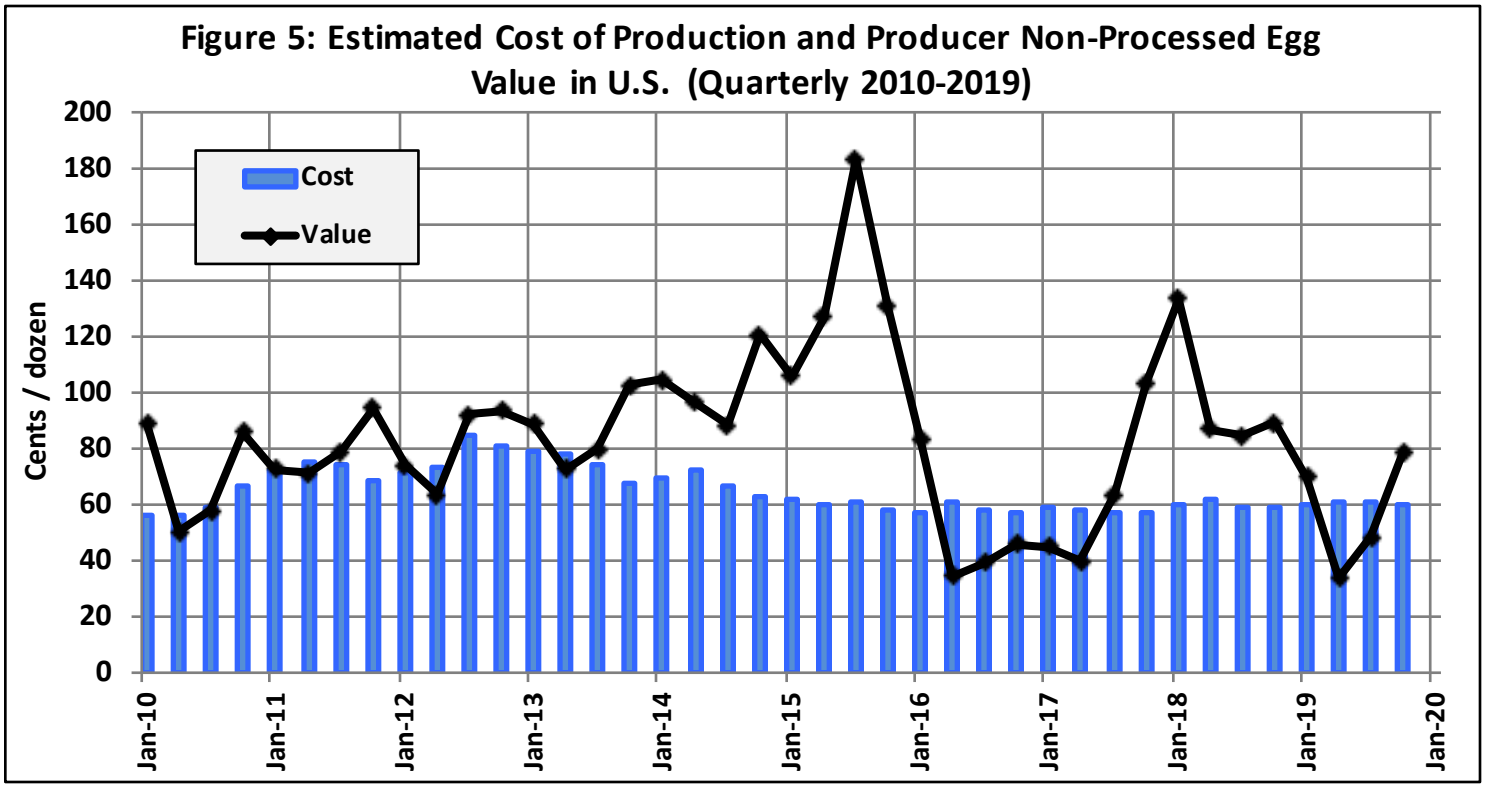
Source: Egg Industry Center, based on USDA Marketnews published prices of corn and soybean meal

"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)

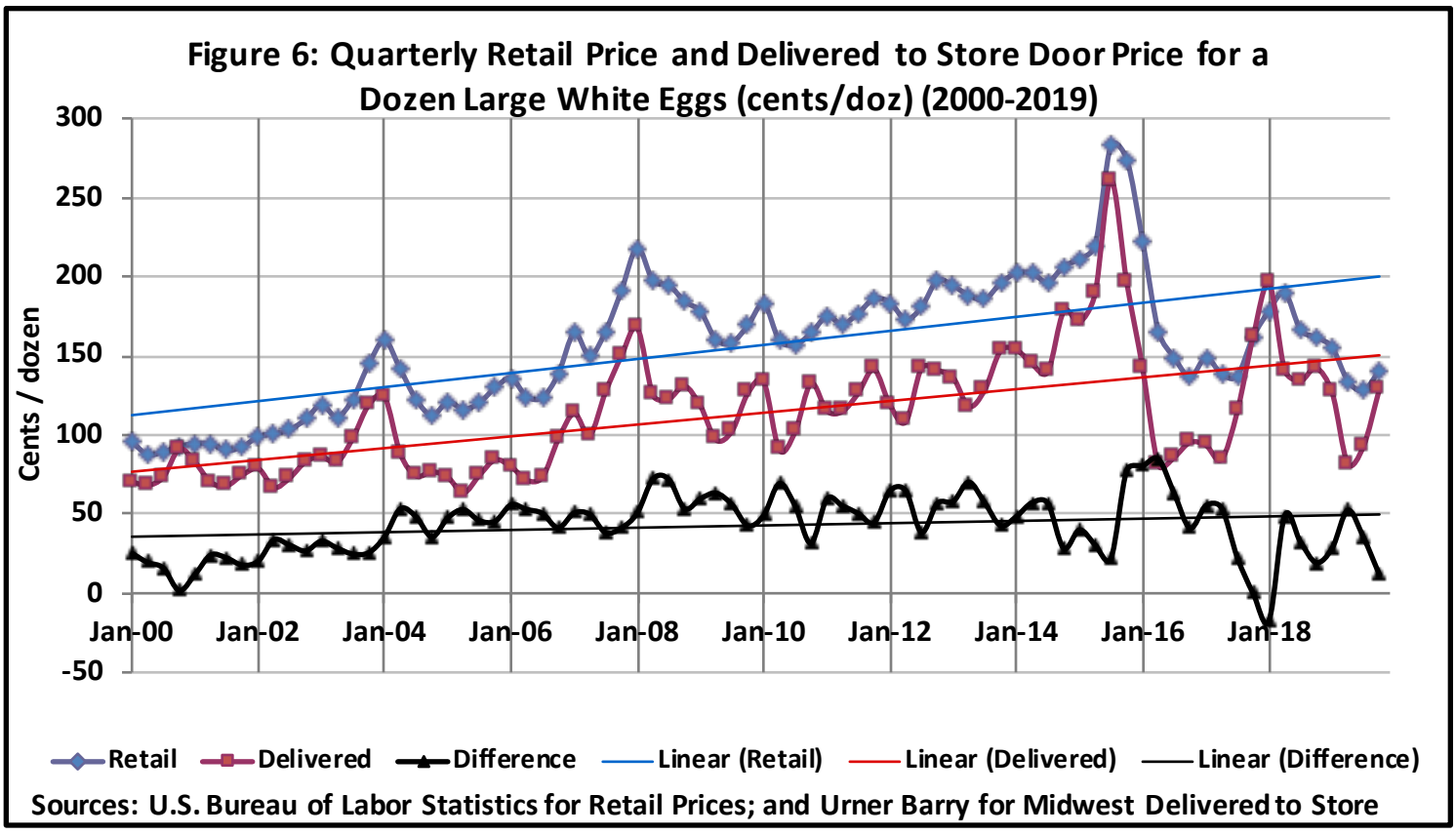


LARGE EGG PRICES - CONVENTIONAL (warehouse) AND CAGE-FREE (to 1st receivers) - ($/dozen) **TABLE 10**

	Conventional White	
	4-Regions AVG	
month	2019	2020
Jan	1.13	0.78
Feb	1.14	1.04
Mar	0.91	
Apr	0.74	
May	0.50	
Jun	0.61	
Jul	0.57	
Aug	0.73	
Sep	0.92	
Oct	0.68	
Nov	1.29	
Dec	1.28	
2 Month Avg.	**1.14**	**0.91**

	Cage-Free to 1st receivers			
	Contracting price		Negotiated price	
month	2019	2020	2019	2020
Jan	1.56	1.53	1.52	0.81
Feb	1.56	1.53	1.62	0.86
Mar	1.50		1.47	
Apr	1.56		1.19	
May	1.56		0.75	
Jun	1.56		0.84	
Jul	1.54		0.63	
Aug	1.54		0.79	
Sep	1.53		0.95	
Oct	1.53		0.97	
Nov	1.53		1.21	
Dec	1.53		1.16	
2 Month Avg.	**1.56**	**1.53**	**1.57**	**0.84**

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



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 (2016 to 2020)

Year	Corn Planted (Million acres)	Corn Harvest (Million acres)	Corn Production Harvested (Million bushels)	Soybeans Planted (Million acres)	Soybeans Harvest (Million acres)	Soybeans Production Harvested (Million bushels)
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	88.9	81.3	14,340	89.2	87.6	4,428
Projections February, 2020				**Projections** February, 2020		
2019/20+	89.7	81.5	13,692	76.1	75.0	3,558

Utilization of Soybean for Various Purposes (Million bushels)

Year	Begin. Stocks	Product-ion	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	88	42.9	1,748	3,971	909
2019/20+	909	3,558	15	4,482	2,105	96	47.0	1,825	4,058	425

Utilization of Corn for Various Purposes (Million bushels)

Year	Begin. Stocks	Product-ion	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	14,340	28	16,509	5,432	5,376	6,791	2,065	14,288	2,221
2019/20+	2,221	13,692	50	15,962	5,525	5,375	6,770	1,775	14,070	1,892

\+ (forecast January, 2020)

* 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	32.9%	32.6%	8.6%	12.5%	13.5%
2019/20+	34.6%	33.7%	8.7%	11.1%	11.9%

*** 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

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Egg Industry Center

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