



**A Special Report:**  
**The market reaction after the 2015**  
**High Path Avian Influenza outbreak**

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## **EXECUTIVE SUMMARY**

This special report describes the dynamics of the egg supply and demand in the months following the high path Avian Influenza (HPAI) outbreak of 2015. The data analysis reveals the following findings and insights.

- As of April 1<sup>st</sup> 2016, the U.S. national layer inventory was 4.8 million hens less as compared to April 1<sup>st</sup> 2015 (before HPAI outbreak).
- The domestic egg usage has recovered and is slightly higher than before the outbreak. However, the industry is providing these eggs at prices lower than before the outbreak – including the lowest April price in a decade. The effect of the HPAI in the demand, if any, is not quantified yet. The lower prices may be indicating a lower demand but we need more data in order to estimate it.
- Although the U.S. has not fully attained its pre-outbreak production capacity, seen in the first part of 2015, our egg supply is strong. The increased imports and the decreased exports have contributed to higher egg availability domestically.
- The U.S. egg production, under normal circumstances, is expected to increase during 2016 as the affected companies continue to repopulate their farms to full capacity. However, consideration of the current marketplace may provide an incentive for some producers to cull some flocks.
- It is very important for the U.S. egg industry to regain the exports market share that was lost due to the HPAI outbreak. It is also important to monitor the egg imports as the U.S. returns to normal production levels.

## INTRODUCTION

The High Path Avian Influenza (HPAI) outbreak experienced from late 2014 to early summer of 2015 resulted in the loss of approximately 35 million laying hens, which represented 11.3% of the national flock. The outbreak also claimed the lives of 6 million pullets. Most of the losses for the egg industry occurred between mid-April and late May.

As a result of the outbreak, U.S. egg exports were reduced to approximately half of the previous year values, with some monthly variations. Large fluctuations in market prices and supply shortages of shell and processed egg set the stage for an almost non-existent import market to explode onto the scene. Both farmer and retail egg prices increased to levels that the market had never experienced before. One year later the industry is dealing with the lowest April prices it has seen in a decade.

This report is intended to inform the U.S. egg industry about the dynamics of the egg supply and demand in the months following the outbreak. The information allows the industry to compare its experiences with previous years and sheds some light on the current market situation.

## STATISTICAL ANALYSIS AND OVERVIEW

Each of the following sections provides a statistical overview of key factors that impact the egg marketplace.

### LAYING HEN INVENTORY

The U.S. egg laying flock continues to recuperate from the losses incurred due to the HPAI outbreak. As shown in table 1, as of April 1, 2016, the national flock remains 4.8 million laying hens (1.6%) lower than April 1, 2015. To this point, flock recuperation has occurred in two ways: repopulation at affected farms and growth of non-affected farms. The Egg Industry Center estimates that it may take until early 2017 for some of the affected farms to fully repopulate their laying hen inventory to pre-outbreak levels.

**Table 1. U.S. monthly layer inventory for the period of January 2014 to April 2016**

	Layers on 1 <sup>st</sup> of Month (million)			Percent Change		Change (million layers)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	308.2	311.3	291.1	1.0%	-6.5%	3.1	-20.2
Feb	306.2	307.6	295.0	0.4%	-4.1%	1.4	-12.6
Mar	307.1	308.5	302.1	0.5%	-2.1%	1.4	-6.4
Apr	308.3	307.6	302.8	-0.2%	-1.6%	-0.8	-4.8
May	308.2	299.5		-2.8%		-8.7	
Jun	306.9	274.0		-10.7%		-32.9	
Jul	307.1	274.3		-10.7%		-32.8	
Aug	309.3	276.0		-10.8%		-33.3	
Sep	309.9	277.1		-10.6%		-32.8	
Oct	310.8	280.7		-9.7%		-30.1	
Nov	310.7	282.6		-9.0%		-28.0	
Dec	314.7	288.3		-8.4%		-26.4	
<b>Jan-Apr 1<sup>st</sup></b>	<b>307.5</b>	<b>308.8</b>	<b>296.1</b>	<b>0.4%</b>	<b>-4.1%</b>	<b>1.3</b>	<b>-12.7</b>
May-Dec 1 <sup>st</sup>	309.7	281.6		-9.1%		-28.1	
Jan-Dec 1 <sup>st</sup>	309.0	290.6		-5.9%		-18.3	

Source: USDA NASS - <https://quickstats.nass.usda.gov/>

## EGG PRODUCTION

Egg production follows a similar trend to the national flock inventory. In March 2016, the U.S. daily egg production was 5 million (2.1%) less than in March 2015. During the first quarter of 2015, the U.S. egg production was increasing and averaging 1.9 million (0.8%) more eggs per day than in 2014. After HPAI, average U.S. daily egg production dropped 10.2% or 24.8 million over the period of May to December 2014 (table 2).

**Table 2. U.S. daily egg production for the period of January 2014 to March 2016**

	Eggs produced (million/day)			Percent Change		Change (million/day)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	239.3	242.1	226.6	1.2%	-6.4%	2.8	-15.5
Feb	238.1	238.8	233.1	0.3%	-2.4%	0.6	-5.7
Mar	240.3	242.5	237.5	0.9%	-2.1%	2.2	-5.0
Apr	241.9	239.9		-0.8%		-1.9	
May	239.8	223.9		-6.6%		-15.8	
Jun	239.5	213.4		-10.9%		-26.1	
Jul	242.0	213.9		-11.6%		-28.1	
Aug	241.8	214.7		-11.2%		-27.1	
Sep	241.0	215.6		-10.6%		-25.4	
Oct	243.2	217.5		-10.5%		-25.6	
Nov	248.8	222.4		-10.6%		-26.4	
Dec	249.4	225.4		-9.6%		-24.0	
<b>Jan-Mar</b>	<b>239.3</b>	<b>241.2</b>	<b>232.4</b>	<b>0.8%</b>	<b>-3.7%</b>	<b>1.9</b>	<b>-8.8</b>
May-Dec	243.2	218.4		-10.2%		-24.8	
Jan-Dec	242.1	225.8		-6.8%		-16.3	

Source: USDA NASS - <https://quickstats.nass.usda.gov/>

## EGG INVENTORY

Egg inventory is measured at the beginning of each month and it includes shell eggs and egg products stored for use. The number may include domestic and imported eggs and products. Egg inventory from January 1 to July 1 2015 was larger than in 2014. It was lower from August 1, 2015 to January 1, 2016. However, national egg inventory for the period of February-March 2016 shifted back and was larger than the same time period of 2015 (table 3).

**Table 3. U.S. national egg inventory for the period of January 2014 to April 2016**

	Egg inventory 1 <sup>st</sup> of month (million)			Percent Change		Change (million)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	1,164	1,406	1,377	20.8%	-2.1%	241.8	-29.7
Feb	1,196	1,385	1,403	15.8%	1.3%	189.4	17.6
Mar	1,173	1,461	1,478	24.5%	1.2%	287.6	17.4
Apr	1,198	1,276	1,361	6.5%		77.5	
May	1,087	1,295		19.1%		207.2	
Jun	1,089	1,215		11.6%		126.0	
Jul	1,144	1,194		4.3%		49.6	
Aug	1,277	1,153		-9.7%		-123.8	
Sep	1,376	1,231		-10.6%		-145.4	
Oct	1,411	1,290		-8.6%		-121.3	
Nov	1,442	1,332		-7.6%		-109.3	
Dec	1,356	1,321		-2.6%		-35.0	

Source: USDA

**EXPORTS**

The lower production of eggs during the outbreak and afterward was compensated for, in part, by a decrease in the volume of eggs exported. In the first quarter of 2015, the U.S. had experienced an increase in exports over the previous year, averaging approximately 1.4 million eggs/day or a growth of 14%. However, when the exports dropped as a result of the outbreak, this resulted in 5.9 million (46.4%) fewer eggs exported per day (for the period of May to December). As of March 2016, egg exports remained lower than the previous year. In the first quarter of 2016, the industry exported 5.3 million (45.3%) less eggs per day than in 2015 (table 4).

**Table 4. U.S. daily egg export for the period of January 2014 to March 2016**

	Eggs exported (million/day)			Percent Change		Change (million/day)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	9.4	11.4	5.1	21.7%	-55.1%	2.0	-6.3
Feb	11.3	11.9	5.7	5.4%	-52.0%	0.6	-6.2
Mar	9.9	11.5	8.1	15.6%	-29.2%	1.5	-3.4
Apr	10.8	11.3		4.4%		0.5	
May	11.3	8.6		-24.4%		-2.8	
Jun	11.3	6.2		-44.9%		-5.1	
Jul	11.4	6.0		-47.4%		-5.4	
Aug	11.8	7.8		-33.5%		-4.0	
Sep	11.6	7.2		-37.6%		-4.4	
Oct	13.1	6.3		-52.2%		-6.8	
Nov	12.5	5.2		-58.1%		-7.3	
Dec	18.1	6.8		-62.3%		-11.3	
<b>Jan-Mar</b>	<b>10.2</b>	<b>11.6</b>	<b>6.3</b>	<b>14.0%</b>	<b>-45.3%</b>	<b>1.4</b>	<b>-5.3</b>
May-Dec	12.6	6.8		-46.4%		-5.9	
Jan-Dec	11.9	8.3		-29.8%		-3.5	

Source: USDA FAS - <http://apps.fas.usda.gov/gats/default.aspx>

**IMPORTS**

To help offset the production loss caused by the outbreak, an increase in egg imports occurred, especially during the later part of 2015. The first six months of 2015 had similar imports to the same period of 2014. Starting in July 2015, imports increased and the 2<sup>nd</sup> semester imports were 3.9 million more eggs per day (303%) over the same period of 2014. Egg imports continued even higher into the first quarter of 2016 at 634% or 6.2 million eggs per day higher than 2015 (table 5).

**Table 5. U.S. daily egg import for the period of January 2014 to March 2016**

	Eggs imported (million/day)			Percent Change		Change (million/day)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	0.6	1.0	6.7	72.7%	538.6%	0.4	5.6
Feb	1.2	1.0	7.8	-16.4%	703.5%	-0.2	6.8
Mar	0.9	0.9	7.0	4.6%	673.3%	0.0	6.1
Apr	1.1	0.7		-33.9%		-0.4	
May	0.9	0.8		-11.1%		-0.1	
Jun	1.3	1.3		-2.3%		0.0	
Jul	1.1	2.2		96.6%		1.1	
Aug	1.3	5.1		294.8%		3.8	
Sep	1.5	6.1		298.8%		4.6	
Oct	1.6	6.3		303.2%		4.7	
Nov	1.3	6.5		409.3%		5.2	
Dec	0.9	5.0		427.2%		4.1	
<b>Jan-Mar</b>	<b>0.9</b>	<b>1.0</b>	<b>7.1</b>	<b>12%</b>	<b>634%</b>	<b>0.1</b>	<b>6.2</b>
May-Dec	1.2	4.2		209%		2.6	
Jan-Dec	1.1	3.1		172%		2.0	

Source: USDA FAS - <http://apps.fas.usda.gov/gats/default.aspx>

**EGG SUPPLY**

Daily egg supply was the same for February 2016 as for February 2015. This recovery occurred after the market experienced 9 months of below the previous year supply value. The March 2016 egg supply was 1.6 million eggs per day (0.6%) higher than March 2015 (table 6).

**Table 6. U.S. daily egg supply for the period of January 2014 to March 2016**

	Eggs supply (million/day)			Percent Change		Change (million/day)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	277.4	288.5	277.6	4.0%	-3.8%	11.0	-10.8
Feb	282.0	289.2	289.2	2.6%	0.0%	7.2	0.0
Mar	279.0	290.5	292.2	4.1%	0.6%	11.5	1.6
Apr	282.9	283.2		0.1%		0.3	
May	275.8	266.5		-3.4%		-9.3	
Jun	277.1	255.2		-7.9%		-21.9	
Jul	280.0	254.6		-9.1%		-25.4	
Aug	284.3	257.1		-9.6%		-27.3	
Sep	288.4	262.7		-8.9%		-25.7	
Oct	290.3	265.5		-8.6%		-24.8	
Nov	298.2	273.3		-8.3%		-24.8	
Dec	294.1	273.0		-7.2%		-21.1	
<b>Jan-Mar</b>	<b>279.4</b>	<b>289.4</b>	<b>286.3</b>	<b>3.6%</b>	<b>-1.1%</b>	<b>10.0</b>	<b>-3.1</b>
May-Dec	286.0	263.5		-7.9%		-22.5	
Jan-Dec	284.1	271.5		-4.4%		-12.6	

Note: Supply = production + initial inventory + imports

**DOMESTIC EGG USE**

After the outbreak, average daily egg use decreased 6.5% or 15.1 million less eggs during May to December 2015 as compared to 2014. Specifically daily egg use for February 2016 exceeded that for February 2015 by 3.3% or 7.4 million eggs. Similarly, daily egg use for March 2016 was 0.9% or 2.2 million eggs higher as compared to March 2015 (table 6).

**Table 6. U.S. daily egg use for the period of January 2014 to March 2016**

	Domestic eggs used (million/day)			Percent Change		Change (million eggs)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	229.5	232.3	227.3	1.3%	-2.2%	2.9	-5.1
Feb	228.8	225.1	232.5	-1.6%	3.3%	-3.7	7.4
Mar	230.4	237.9	240.1	3.2%	0.9%	7.5	2.2
Apr	235.8	228.7		-3.0%		-7.1	
May	229.3	218.8		-4.6%		-10.6	
Jun	227.7	209.2		-8.1%		-18.5	
Jul	227.4	211.4		-7.0%		-16.0	
Aug	228.1	209.5		-8.2%		-18.6	
Sep	229.8	212.5		-7.5%		-17.3	
Oct	230.7	216.2		-6.3%		-14.5	
Nov	240.5	224.1		-6.8%		-16.4	
Dec	230.6	221.8		-3.8%		-8.9	
<b>Jan-Mar</b>	<b>229.6</b>	<b>232.0</b>	<b>233.3</b>	<b>1.1%</b>	<b>0.6%</b>	<b>2.4</b>	<b>1.3</b>
May-Dec	230.5	215.4		-6.5%		-15.1	
Jan-Dec	230.7	220.6		-4.4%		-10.1	

Note: Use = production + imports + initial inventory - final inventory - exports

**EGG PRICES**

The Midwest price of large white eggs delivered to the store door increased significantly after the outbreak. The 2015 May to December price was 44% (or 64 cents/dozen) higher than the previous year. As the egg supply started to recover the prices decreased. The average price for the period of January to April 2016 was 20% (29 cents/dozen) lower than for the same period of 2015 (table 7). The April 2016 egg price is the lowest April price the industry has experienced since 2006, i.e., 10-year low for April.

**Table 7. Prices of Midwest large white eggs delivered to store door for the period of January 2014 to April 2016**

	UB Midwest Large White (\$/dozen)			Percent Change		Change (\$/dozen)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	1.31	1.29	1.36	-1.0%	5.0%	-0.01	0.06
Feb	1.55	1.49	1.36	-3.9%	-8.7%	-0.06	-0.13
Mar	1.55	1.71	1.06	10.7%	-37.8%	0.17	-0.65
Apr	1.56	1.22	0.79	-21.5%	-35.3%	-0.34	-0.43
May	1.36	1.78		31.2%		0.42	
Jun	1.28	2.30		80.1%		1.02	
Jul	1.44	2.35		64.0%		0.92	
Aug	1.29	2.71		109.8%		1.42	
Sep	1.28	2.29		78.6%		1.01	
Oct	1.34	1.72		28.0%		0.38	
Nov	1.74	2.18		25.5%		0.44	
Dec	2.01	1.55		-22.8%		-0.46	
<b>Jan-Apr</b>	<b>1.49</b>	<b>1.43</b>	<b>1.14</b>	<b>-4.1%</b>	<b>-20.0%</b>	<b>-0.06</b>	<b>-0.29</b>
May-Dec	1.47	2.11		43.9%		0.64	
Jan-Dec	1.47	1.88		27.7%		0.41	

Source: Urner Barry - Comtell - <http://www.ubcomtell.com/>



Retail price of large white eggs also increased. After a price increase of 32% overall (65 cents/dozen) for the period of May to December 2015 price relative to the same period of 2014, the price began to decrease as the entire egg supply started to recover. The first quarter of 2016 showed the retail egg price to be only 5% (11 cents/dozen) higher than the same time period in 2015 (table 8).

**Table 8. Retail prices of large white eggs for the period of January 2014 to April 2016**

	Retail Price (\$/dozen)			Percent Change		Change (\$/dozen)	
	2014	2015	2016	2015/2014	2016/2015	2015-2014	2016-2015
Jan	2.01	2.11	2.33	5.2%	10.2%	0.11	0.22
Feb	2.00	2.09	2.27	4.5%	8.6%	0.09	0.18
Mar	2.06	2.13	2.08	3.5%	-2.4%	0.07	-0.05
Apr	2.12	2.07		-2.5%		-0.05	
May	2.00	1.96		-1.7%		-0.03	
Jun	1.95	2.57		31.9%		0.62	
Jul	1.95	2.57		31.8%		0.62	
Aug	1.98	2.94		48.7%		0.96	
Sep	1.97	2.97		50.6%		1.00	
Oct	1.95	2.81		43.9%		0.86	
Nov	2.03	2.66		31.1%		0.63	
Dec	2.21	2.75		24.5%		0.54	
<b>Jan-Mar</b>	<b>2.02</b>	<b>2.11</b>	<b>2.23</b>	<b>4.4%</b>	<b>5.4%</b>	<b>0.09</b>	<b>0.11</b>
May-Dec	2.00	2.65		32.4%		0.65	
Jan-Dec	2.02	2.47		22.3%		0.45	

Source: Bureau of Labor Statistics - [http://data.bls.gov/timeseries/APU0000708111?data\\_tool=Xgtable](http://data.bls.gov/timeseries/APU0000708111?data_tool=Xgtable)