

**The Evolution of Broiler Production Programs since 1985**  
**and Challenges in How Broilers Will Be Grown in Coming Years**

**Michael Donohue**  
**Vice President, Agri Stats, Inc.**  
**Southern Conference on Avian Diseases**  
**Milton Dendy Keynote Lecture**  
**January 30, 2017**  
**Atlanta, Georgia**



## **Milton Youngsett Dendy (1915 to 2017)**

- **Born in Marshall County, Alabama in 1915**
- **Served in the U.S. Army in World War II in North Africa and Europe**
- **B.S. in Agriculture (1947) from the University of Missouri**
- **M.S. in Agriculture (1950) also from Missouri**
- **University of Georgia Cooperative Extension Service from 1957 to 1977**
- **After retiring from the University of Georgia Mr. Dendy began a lengthy consultancy with the World Bank aiding poultry programs in Africa, the Middle East, Central Europe and China**
- **‘kindest, most humble and gentlest of souls’**

# Donohue Family Motto

- **‘Saepe Iniuriam, Nunquam Incerta’**

# Donohue Family Motto

- **‘Saepe Iniuriam, Nunquam Incerta’**
- **English Translation:**
  - **‘Often Wrong, Never Uncertain’**

# **Agri Stats and the Broiler Industry**

- **Agri Stats – A Benchmarking Tool**
  - **Best Management Practice Programs**
- **Confidential and Verifiable Identification of Competitive Strengths and Opportunities**
- **Action Plans to Improve Costs and Efficiencies**

# **Agri Stats and the Broiler Industry**

- **Started by Jim Cox – 1985**
- **Currently > 95% of U.S. Broiler Processors**
- **Turkey report since 2001 – 95 % Industry Participation**
- **Egg report : > 100 Million commercial layers**
- **Swine report : over 1.2 million sows**
- **Express Markets Inc. (EMI)**
  - **Daily U.S. price discovery for U.S. broiler production**
  - **Reporting actual daily invoiced activity of over 180 million lbs. of chicken.**
- **Reports for Canada, Mexico, Brazil, Chile, Peru, Russia production**

# Topics

- **Long Term Advances : Breeders and Broilers**
- **Current production Trends**
- **The Evolution of Product Mix in broiler production**
- **Changes in Feeding programs in recent years**
- **Ongoing challenges in live production and processing**

# Topics

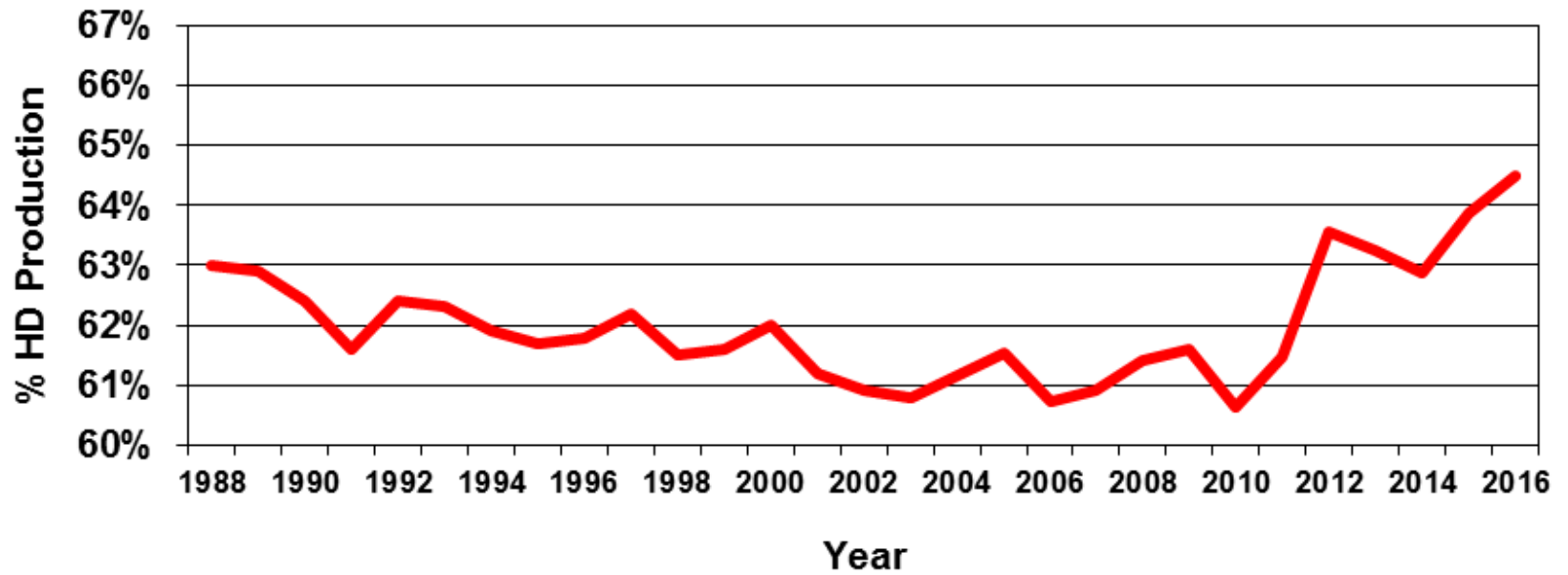
- **Long Term Advances : Breeders and Broilers**
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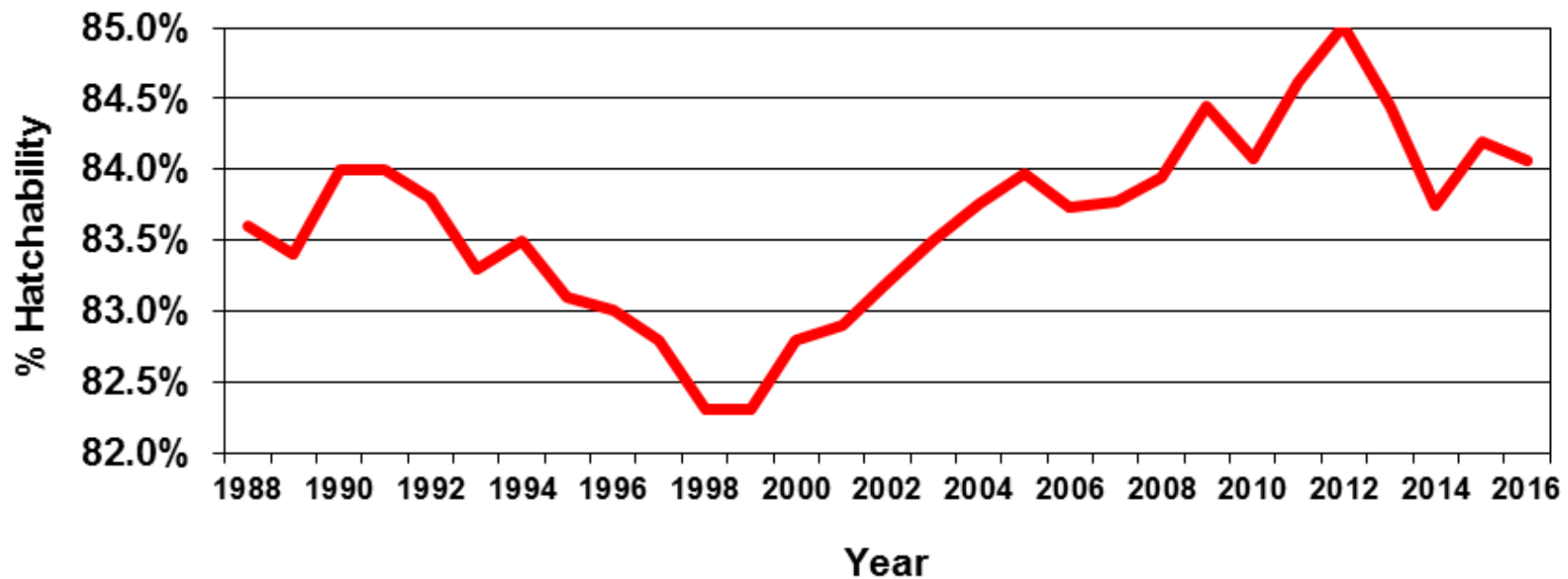
# **Agri Stats ‘Vital Signs’**

**1988 through 2016**

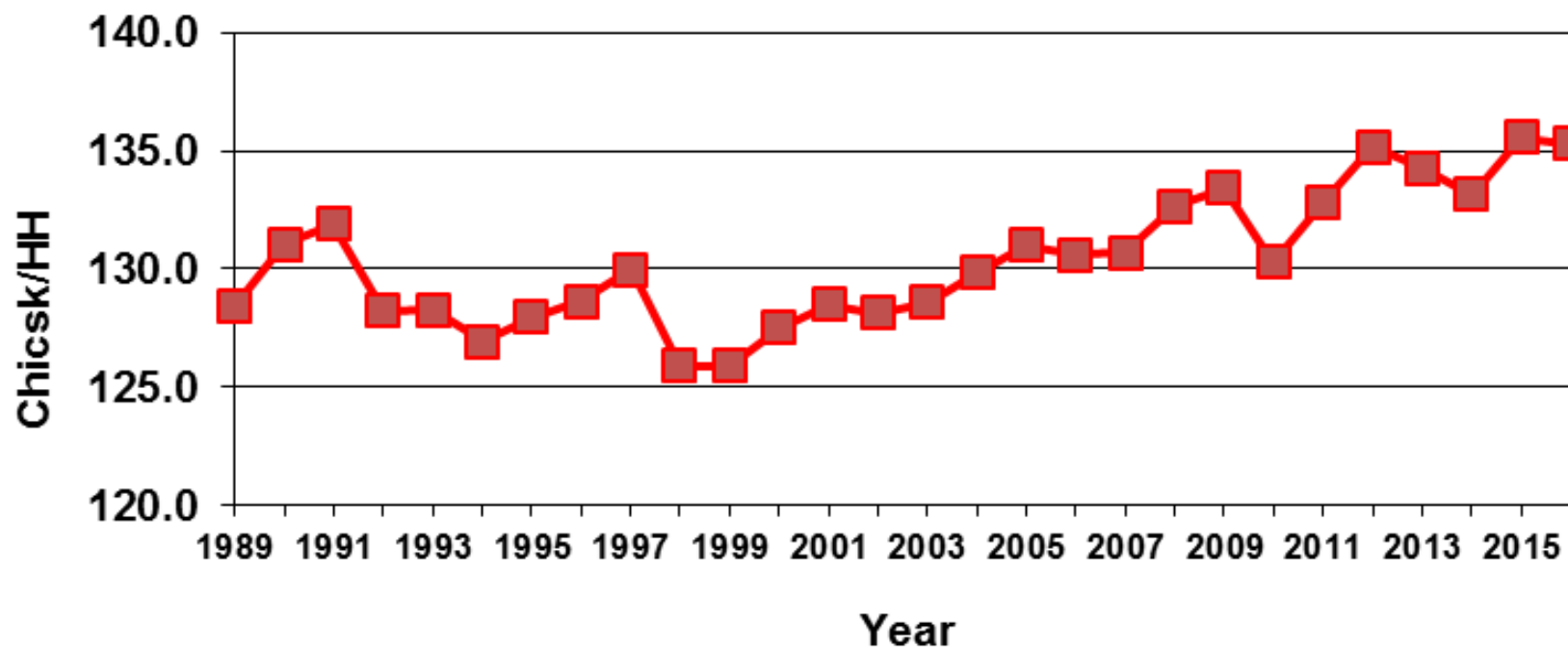
**% Production (adj to 45 Weeks of Age)  
Agri Stats Vital Signs 1988 through 2016**



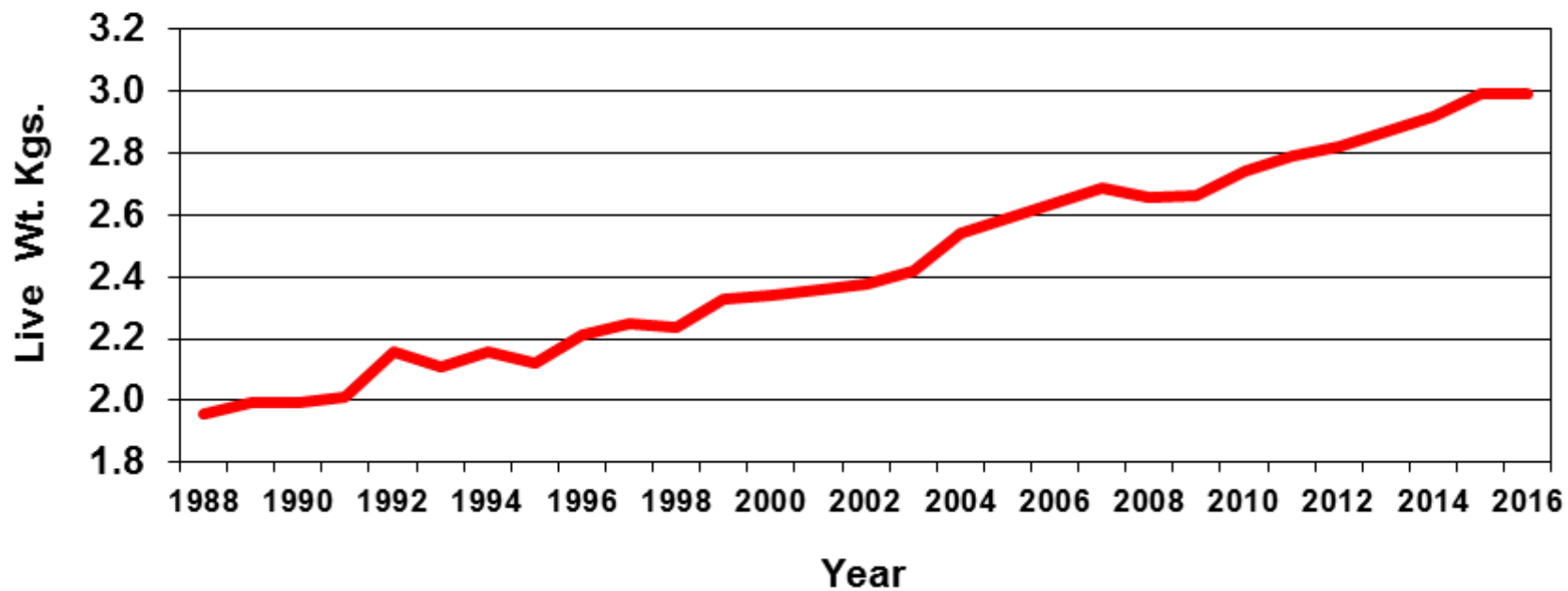
**% Hatchability (adj to 45 Weeks of Age)  
Agri Stats Vital Signs 1988 through 2016**



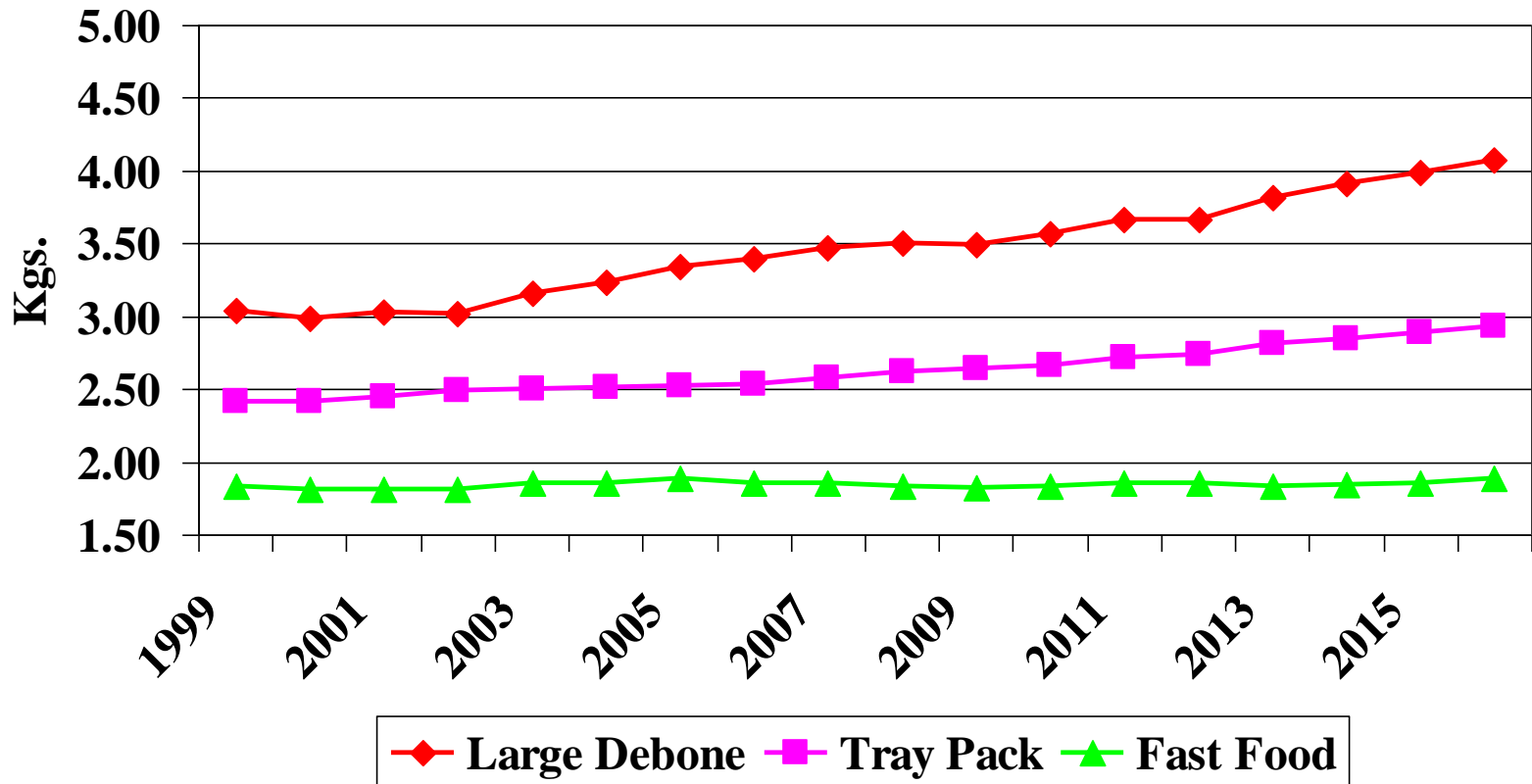
### Chicks per Hen Housed adj. to 65 Weeks of Age Agri Stats Vital Signs 1989 through 2016



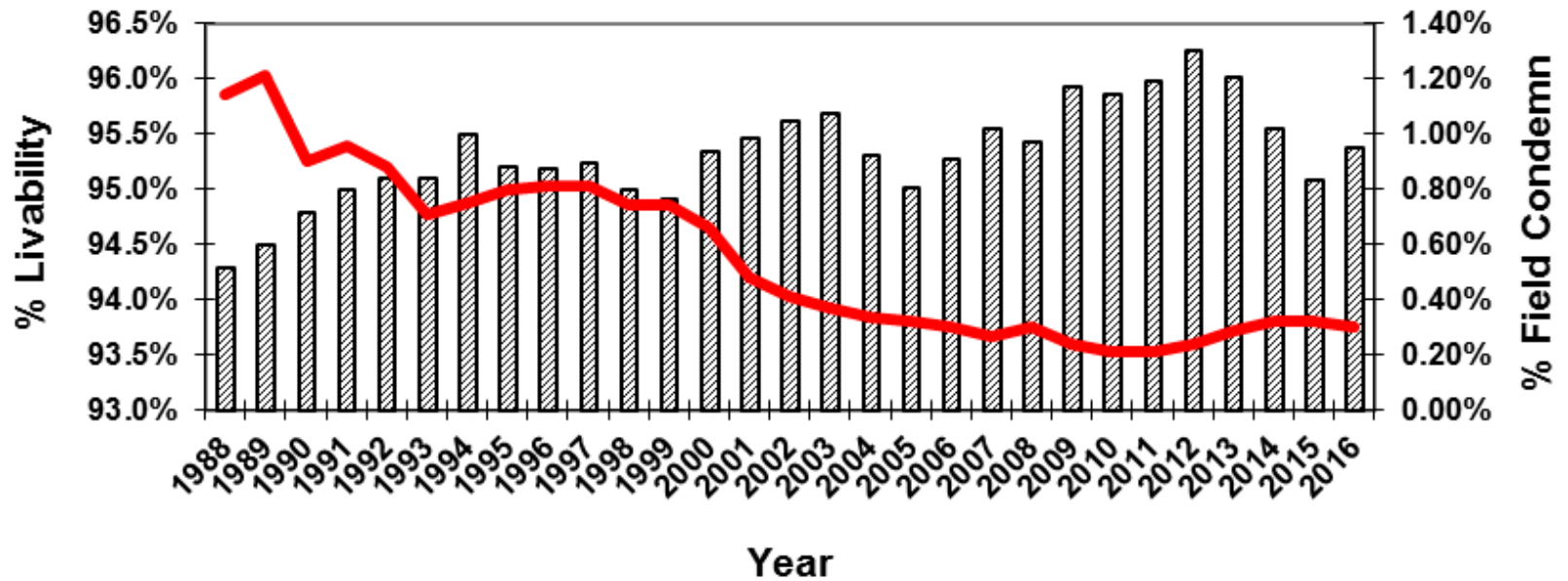
## Average Broiler Wt. Agri Stats Vital Signs 1988 through 2016



# Live Wt. (Kgs.)



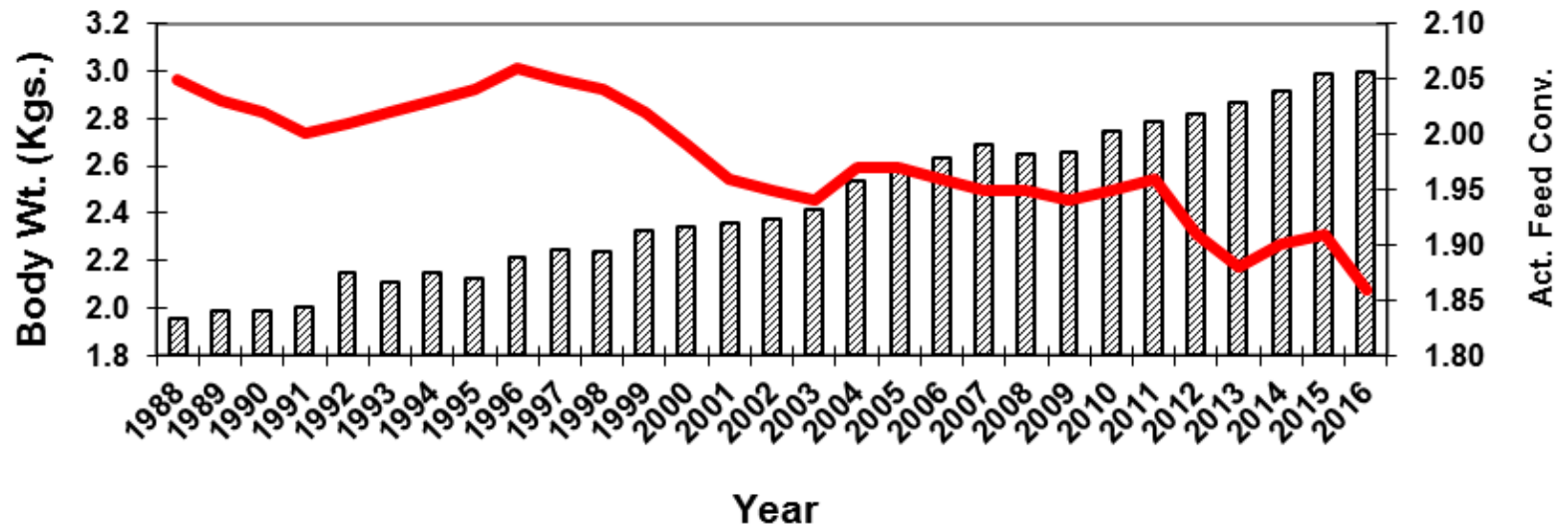
## Broiler Livability and Field Condemn %



▨ Livability

— WB Field Cond

## Industry Live Wt. and Actual Feed Conversion Agri Stats Vital Signs 1988 through 2016

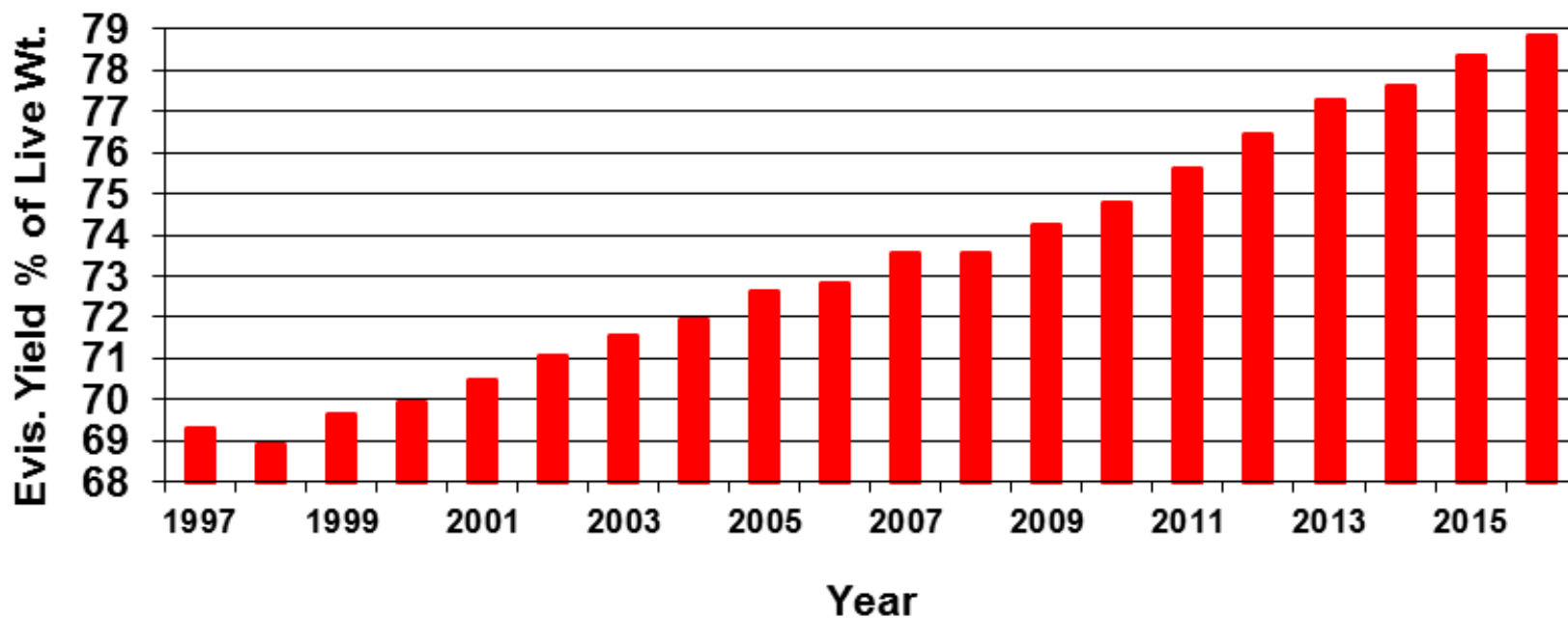


Live Wt.

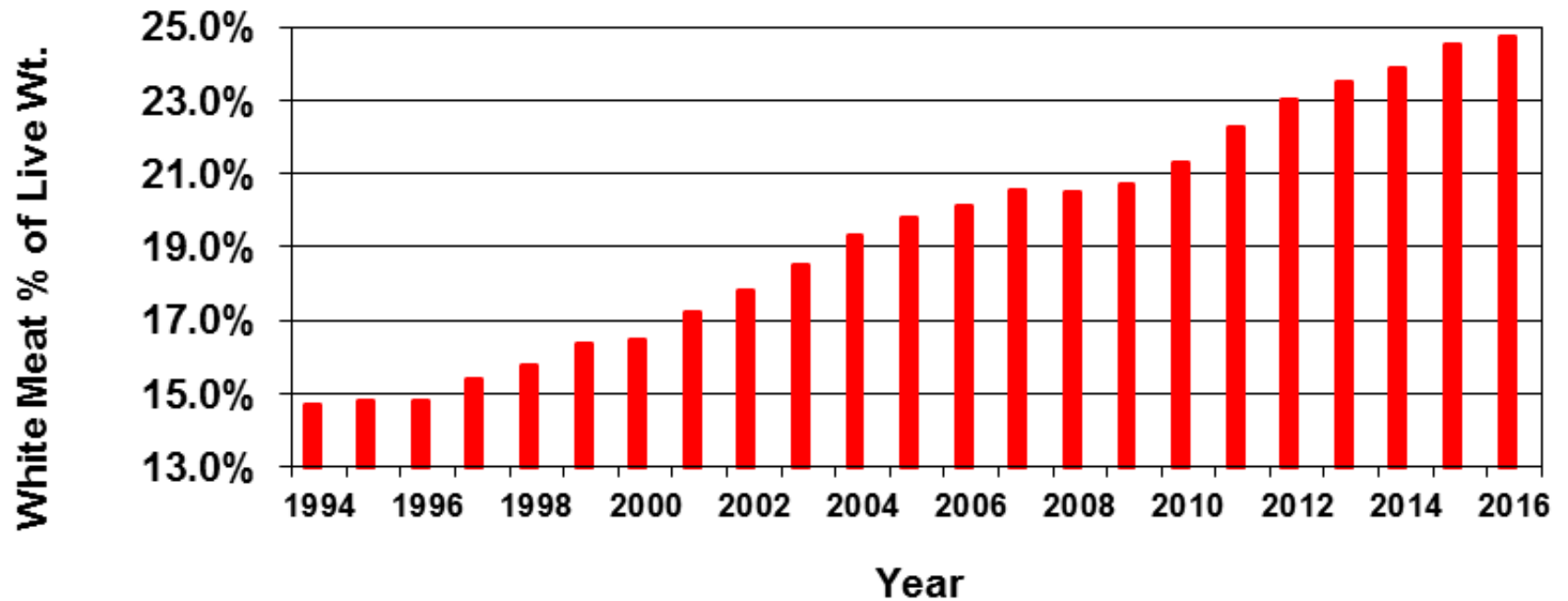
FCR



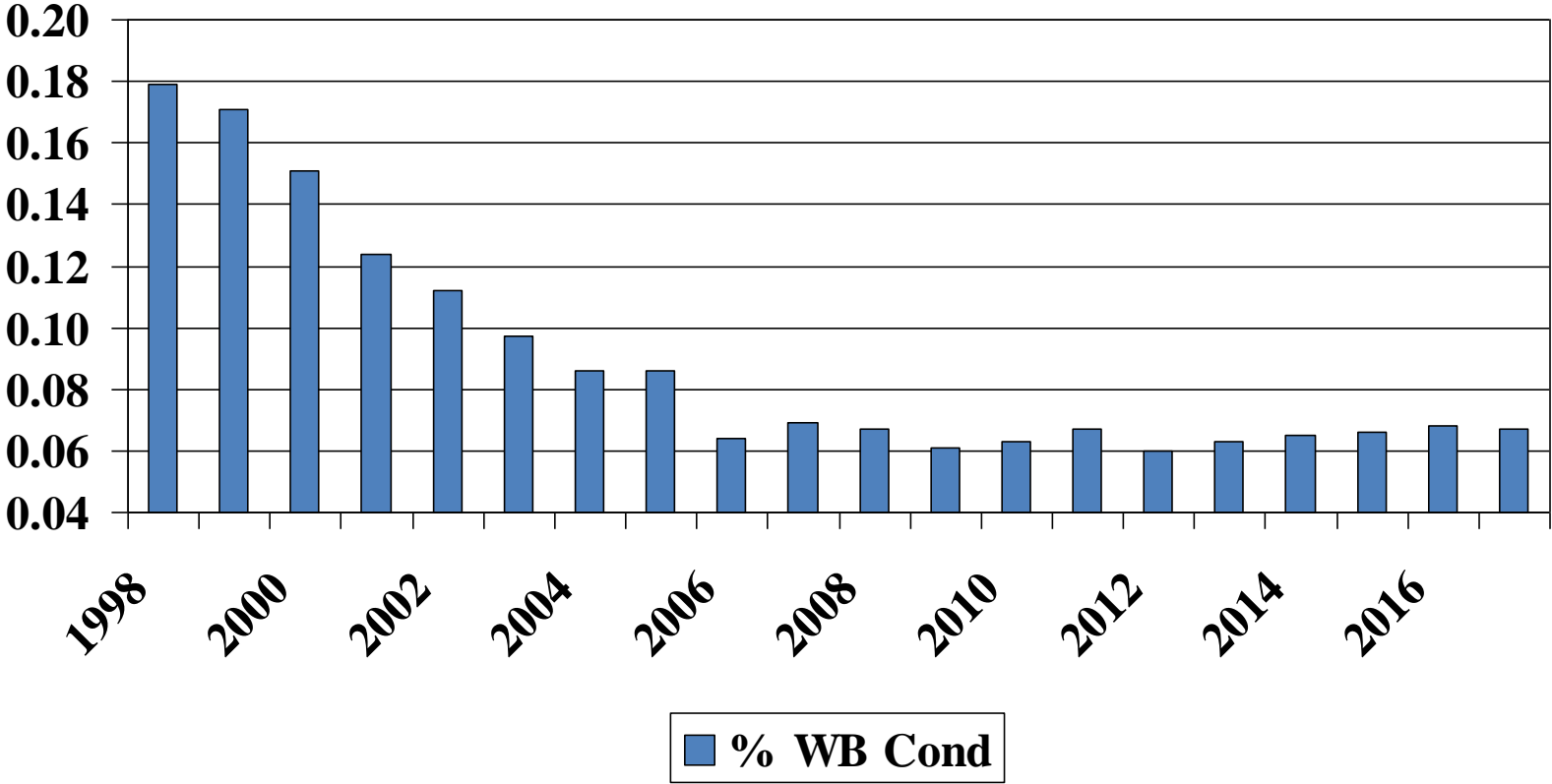
## Evis. Yield % of Live Wt. Agri Stats Vital Signs 1997 through 2016



## White Meat Yield Agri Stats Vital Signs 1994 through 2016



# % Whole Bird Plant Condemn

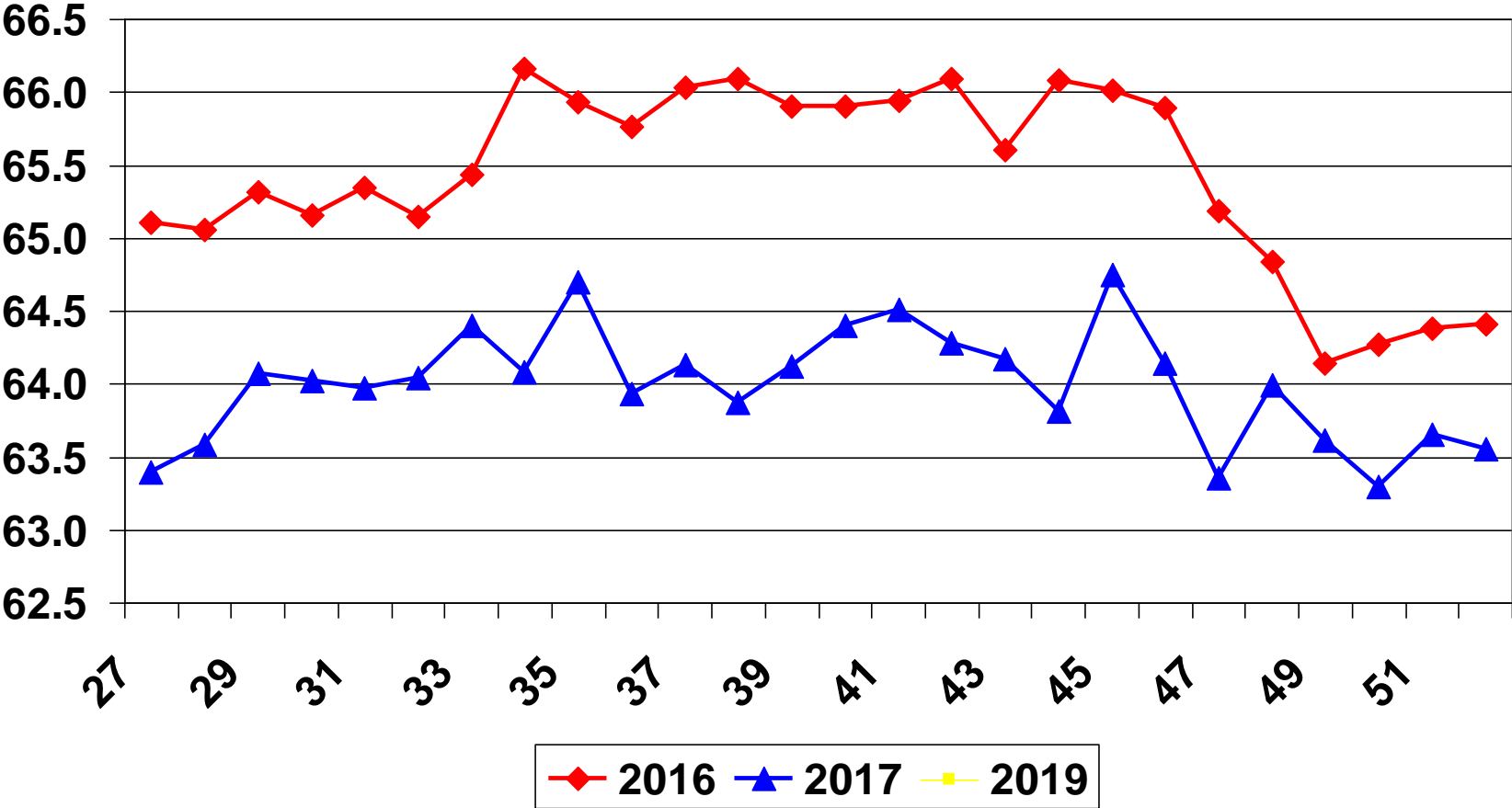


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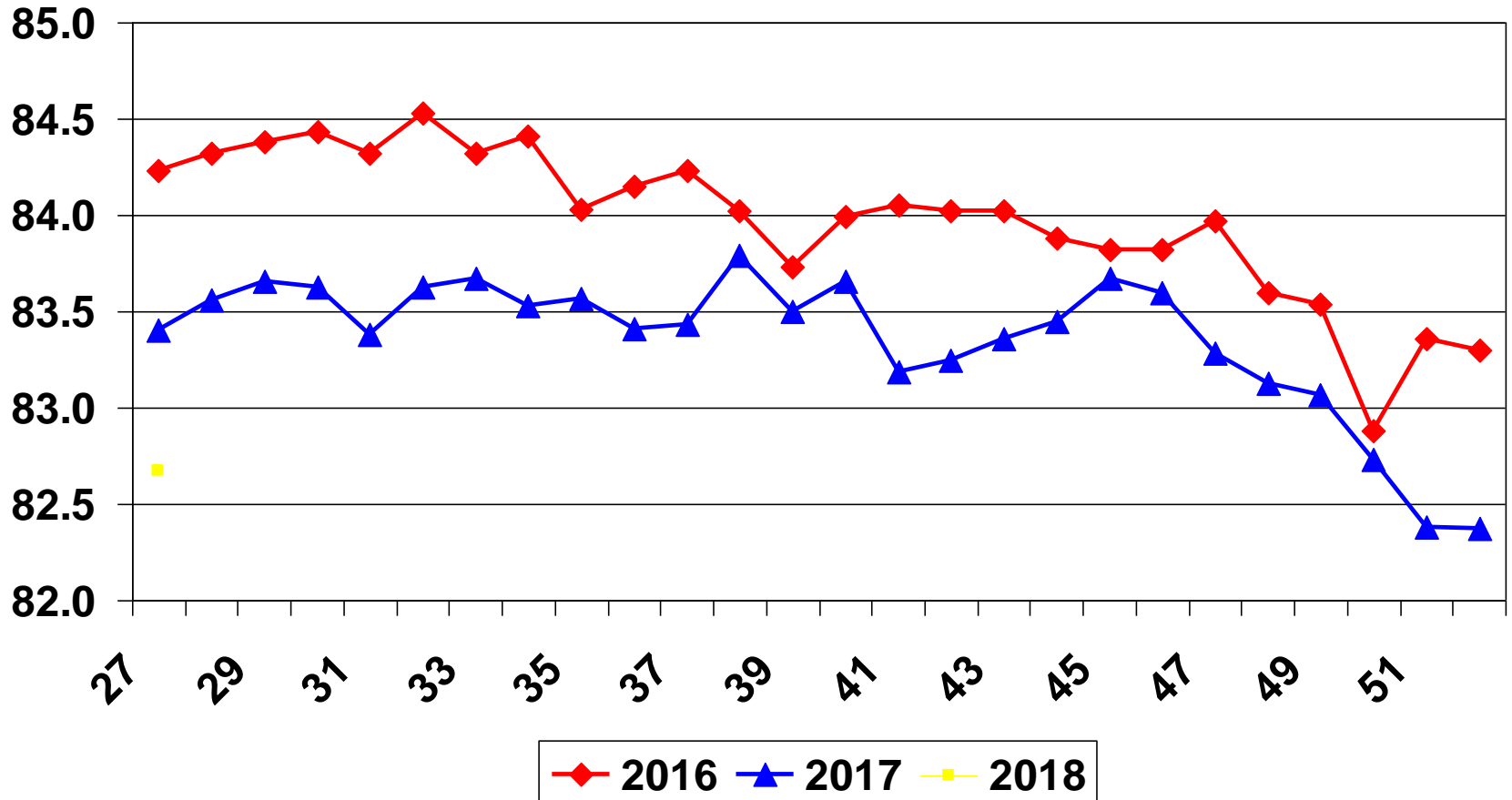
# % Hen Day Production (adj. to 45 wks. of age)

July to December 2016 and 2017

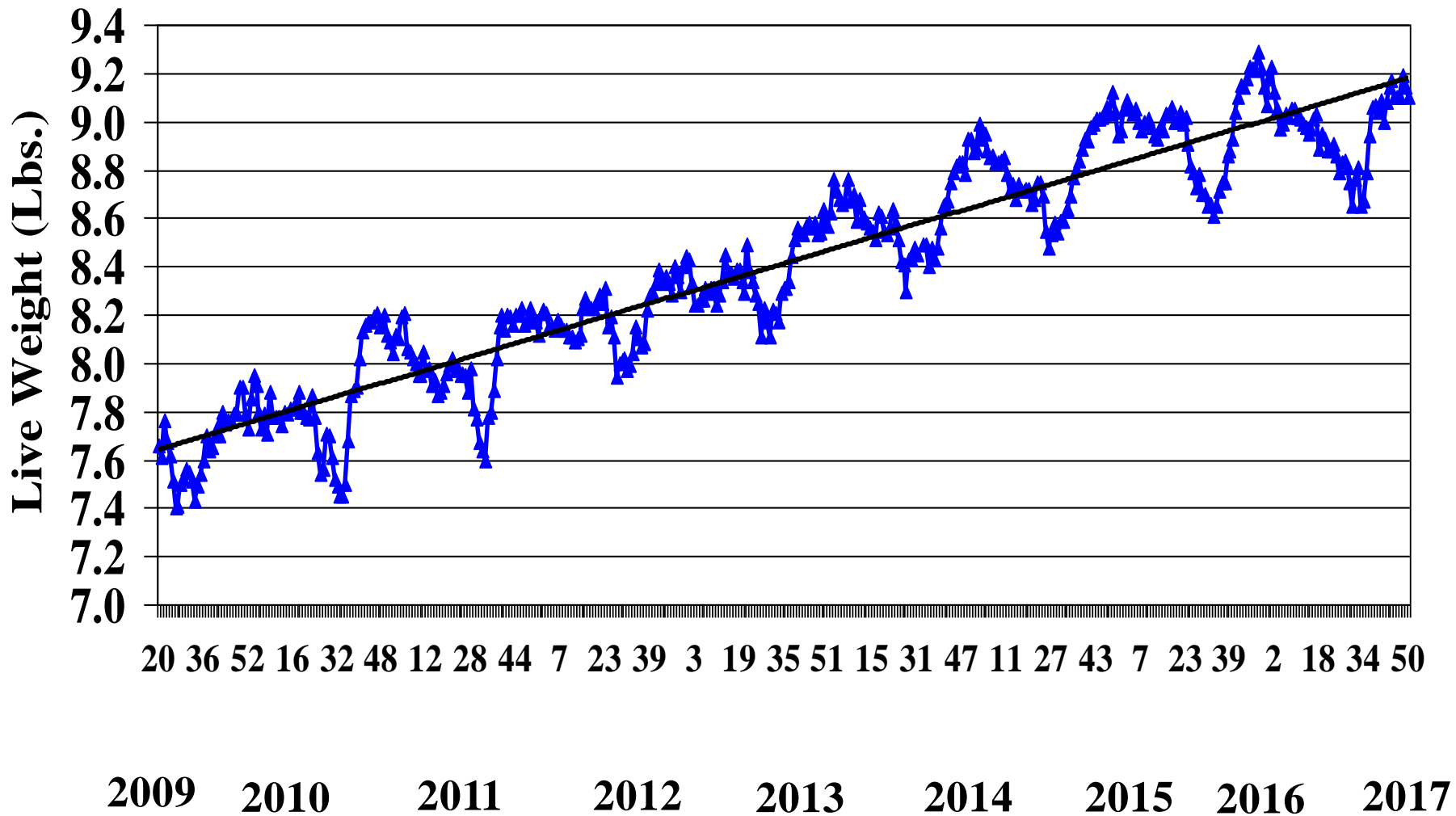


# % Hatchability : Adj. to 45 Weeks of Age

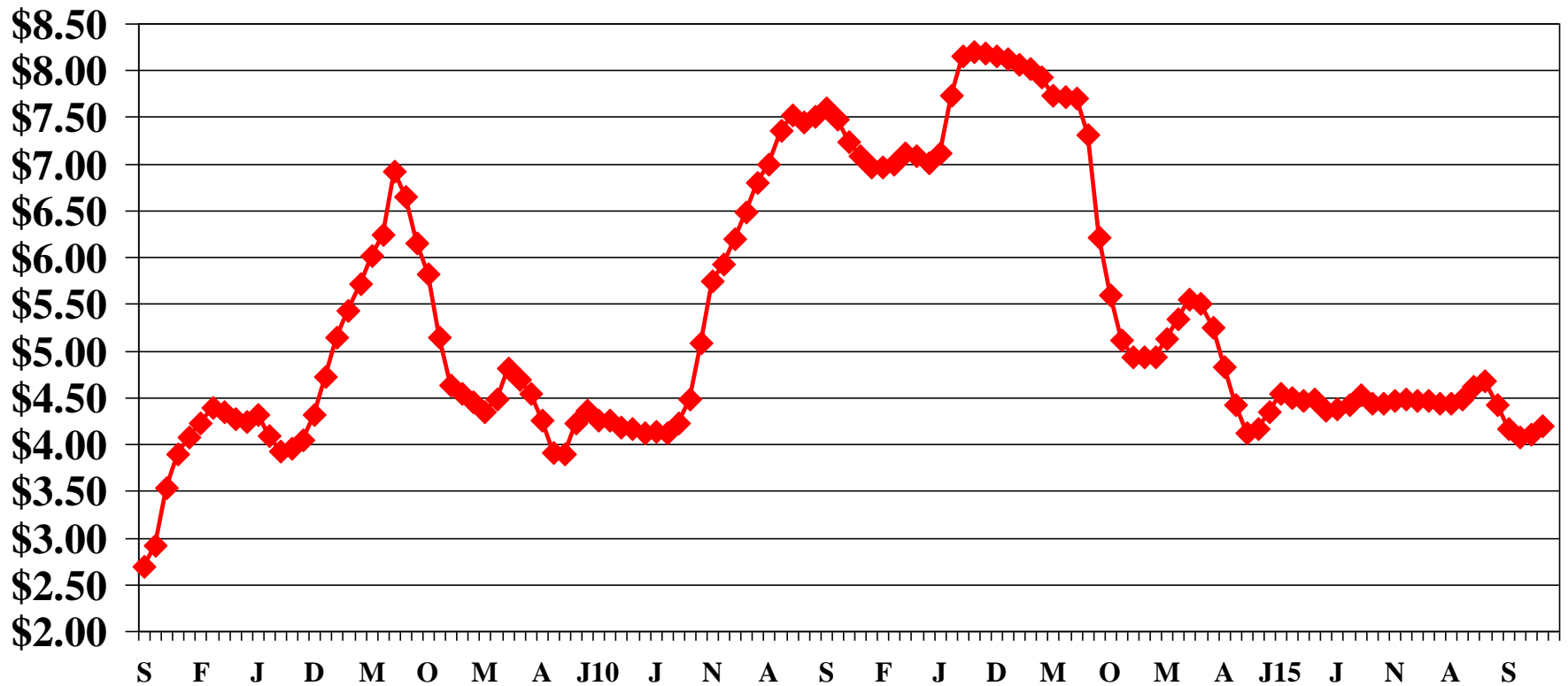
## July to December 2016 and 2017



# Changes in Live Wt. Big Bird Deboners



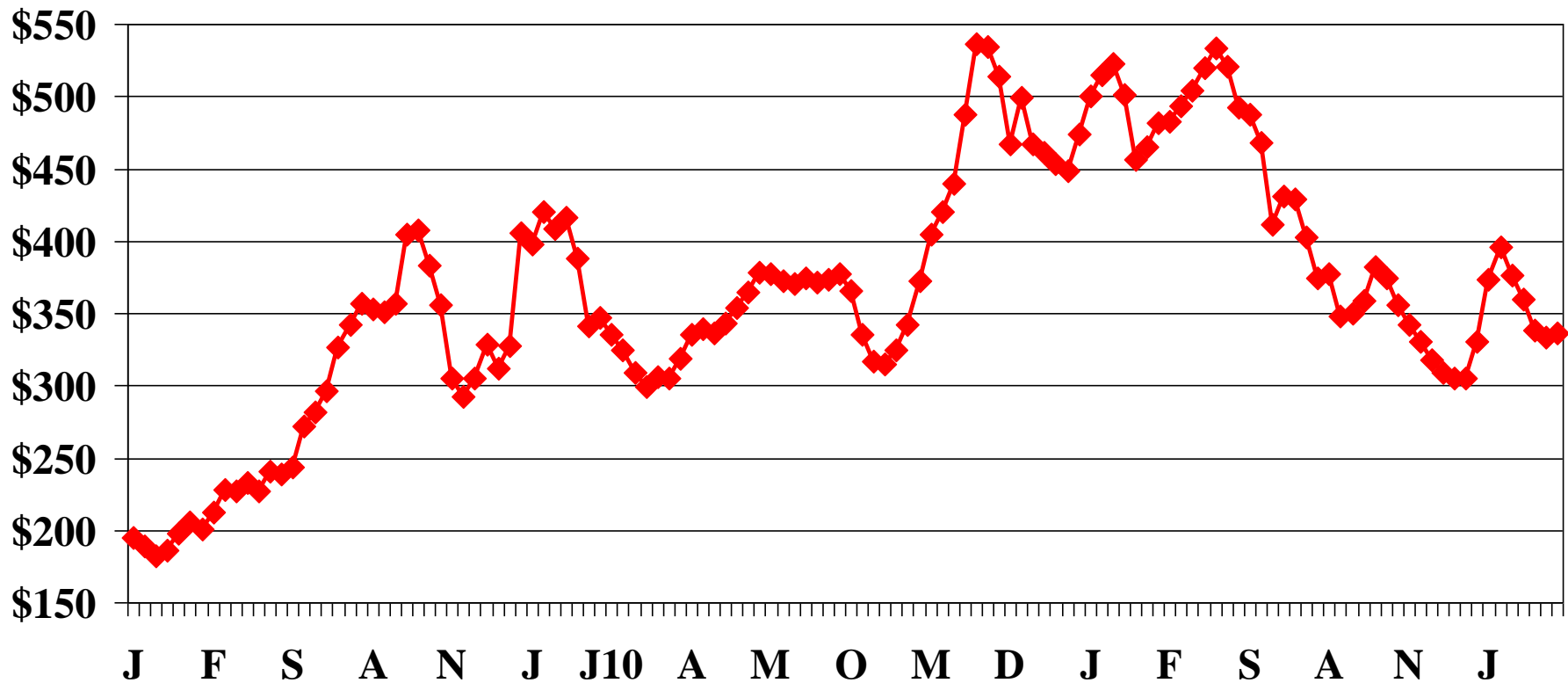
# Actual Corn Cost/Bushel September 2006 to December 2016



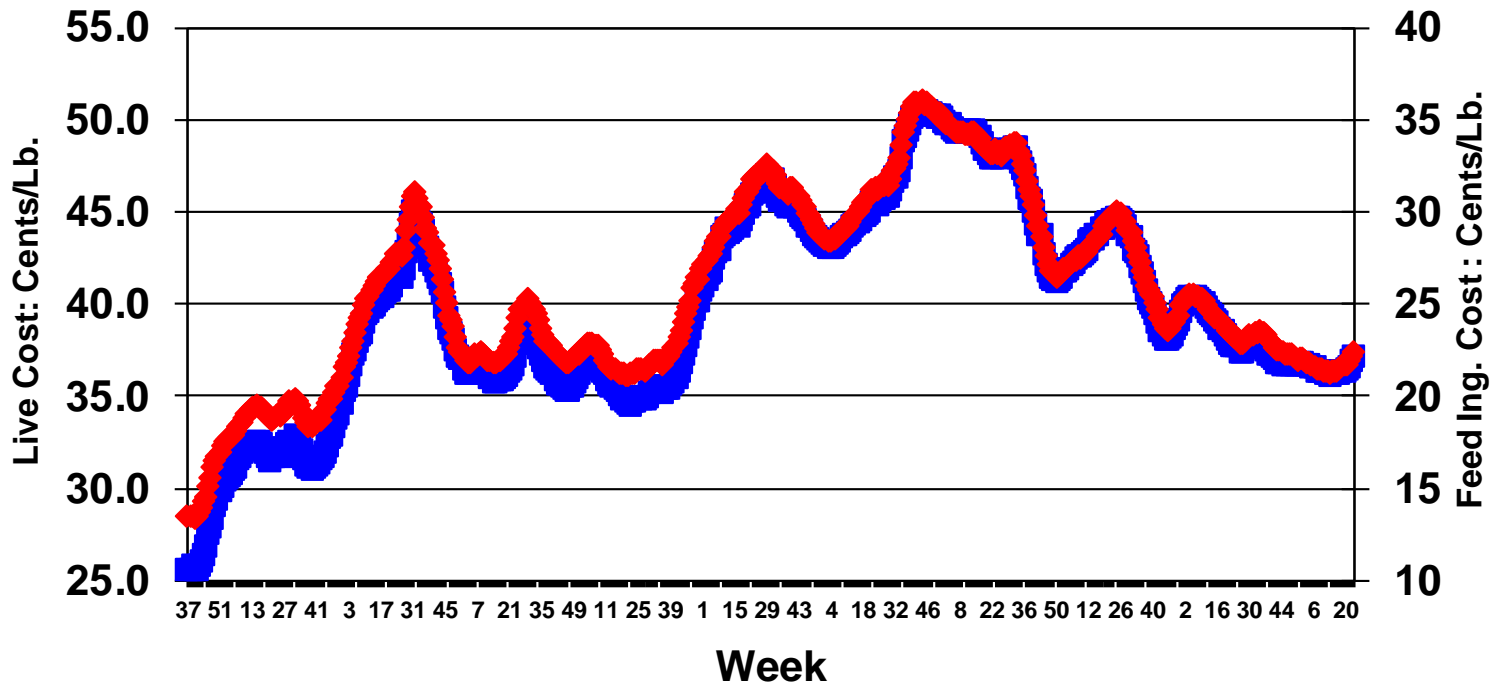


# Actual Soybean Meal Cost/Ton

## September 2006 through December 2016



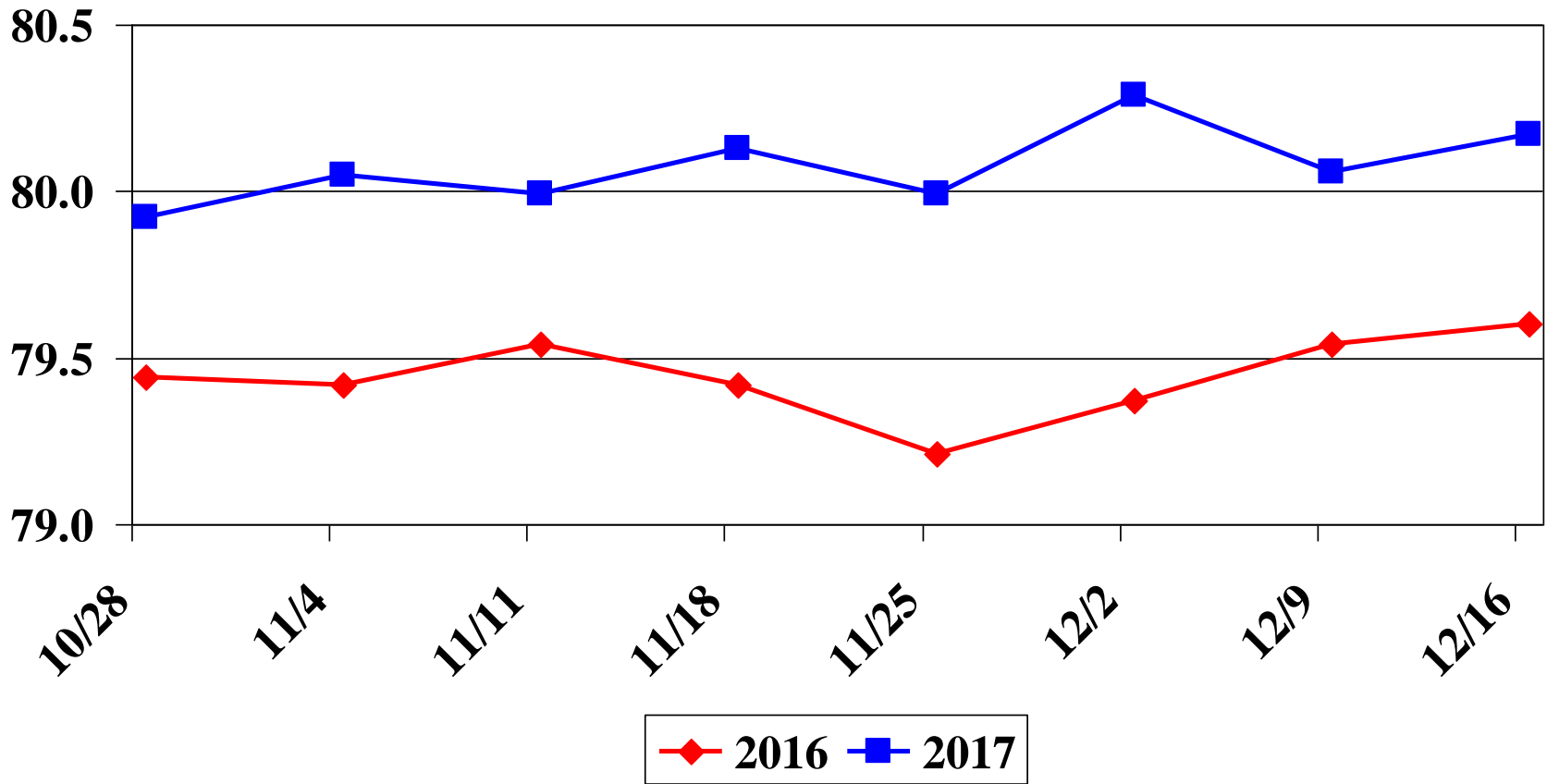
# Live Cost and Broiler Feed Ing. Cost September 16, 2006 through December 2016



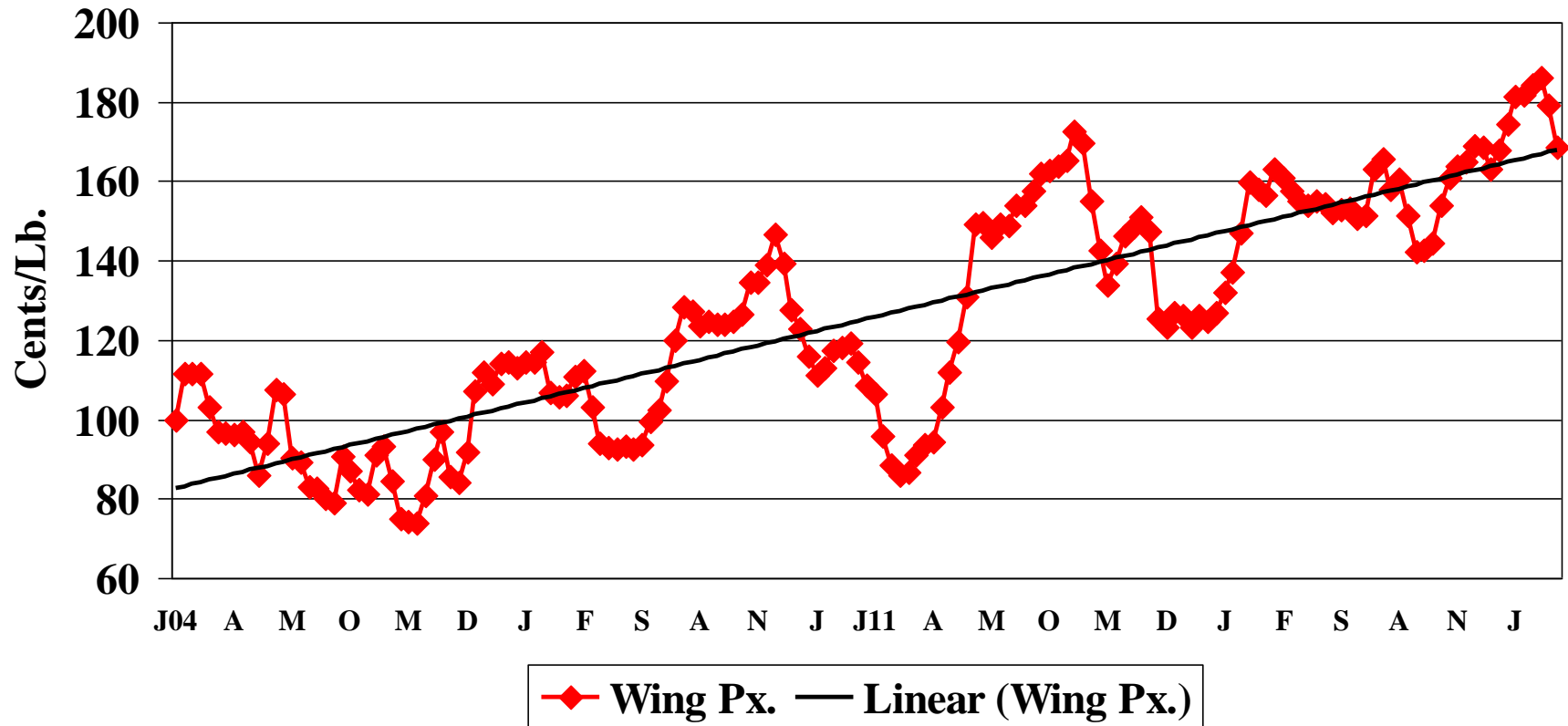
—■— Live Production Cost    —◆— Feed Ing. Cost

# % WOG Yield

## U.S. Industry : 2016 and 2017

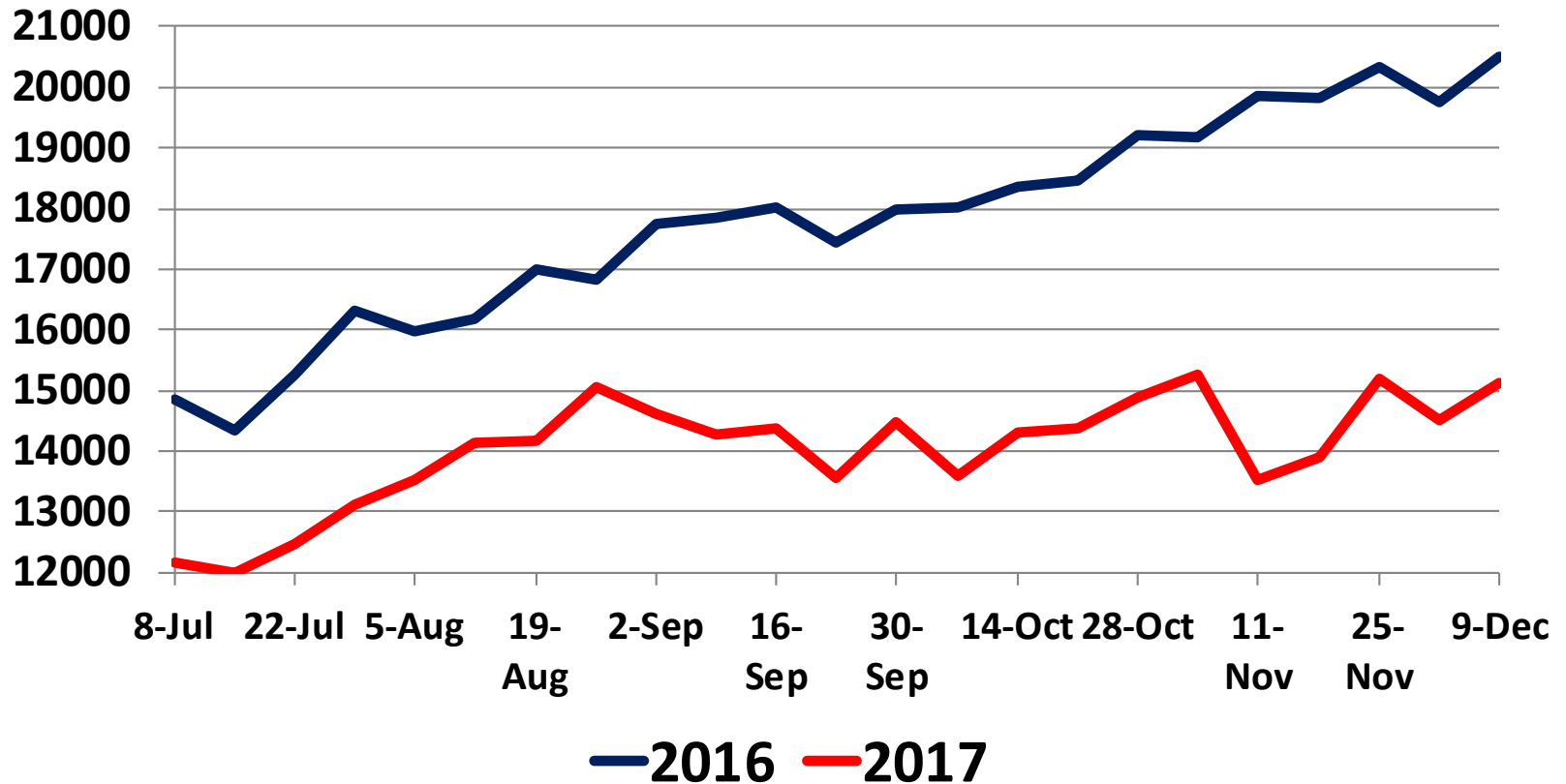


# Wing Prices (Cents/Lb.) Monthly Avg. Price January 2004 through November 2017



# Inventory of Frozen Wings (Lbs. 000)

## July through December 2016 and 2017

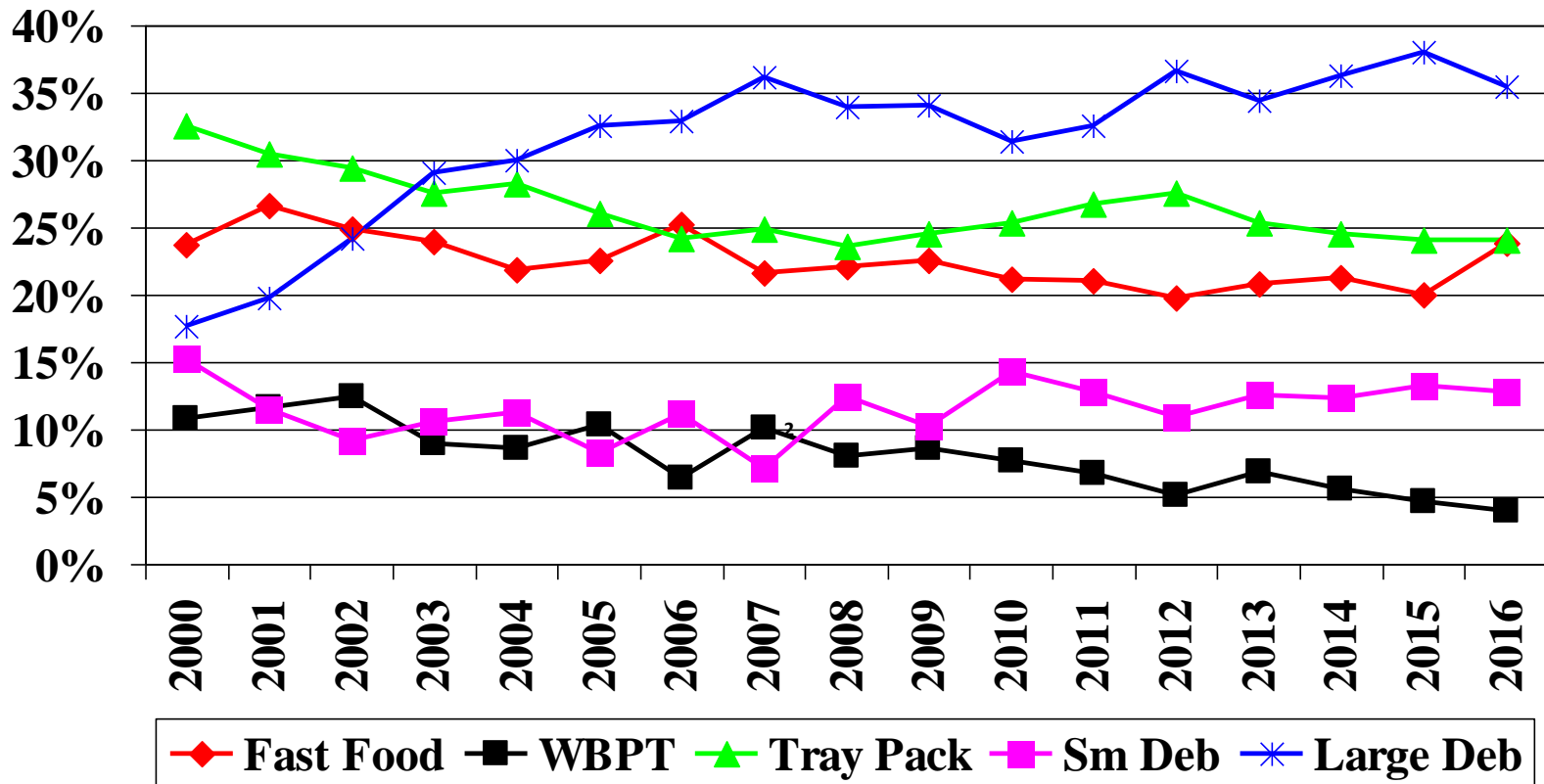


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# Volumes of Processed Lbs. by Plant Type

## Agri Stats 2000 through 2016

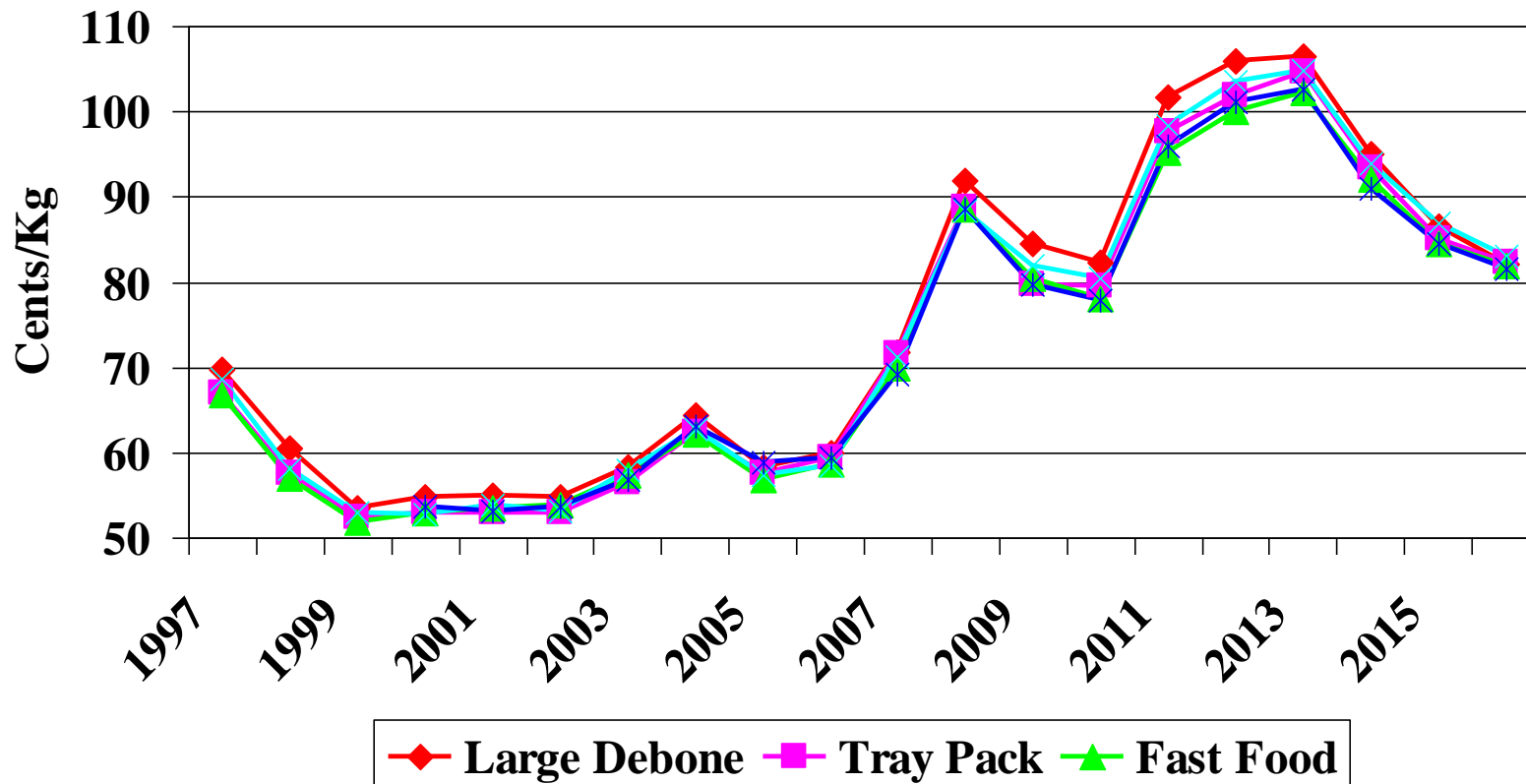


# Percent of Kgs. by Live Wt. Category

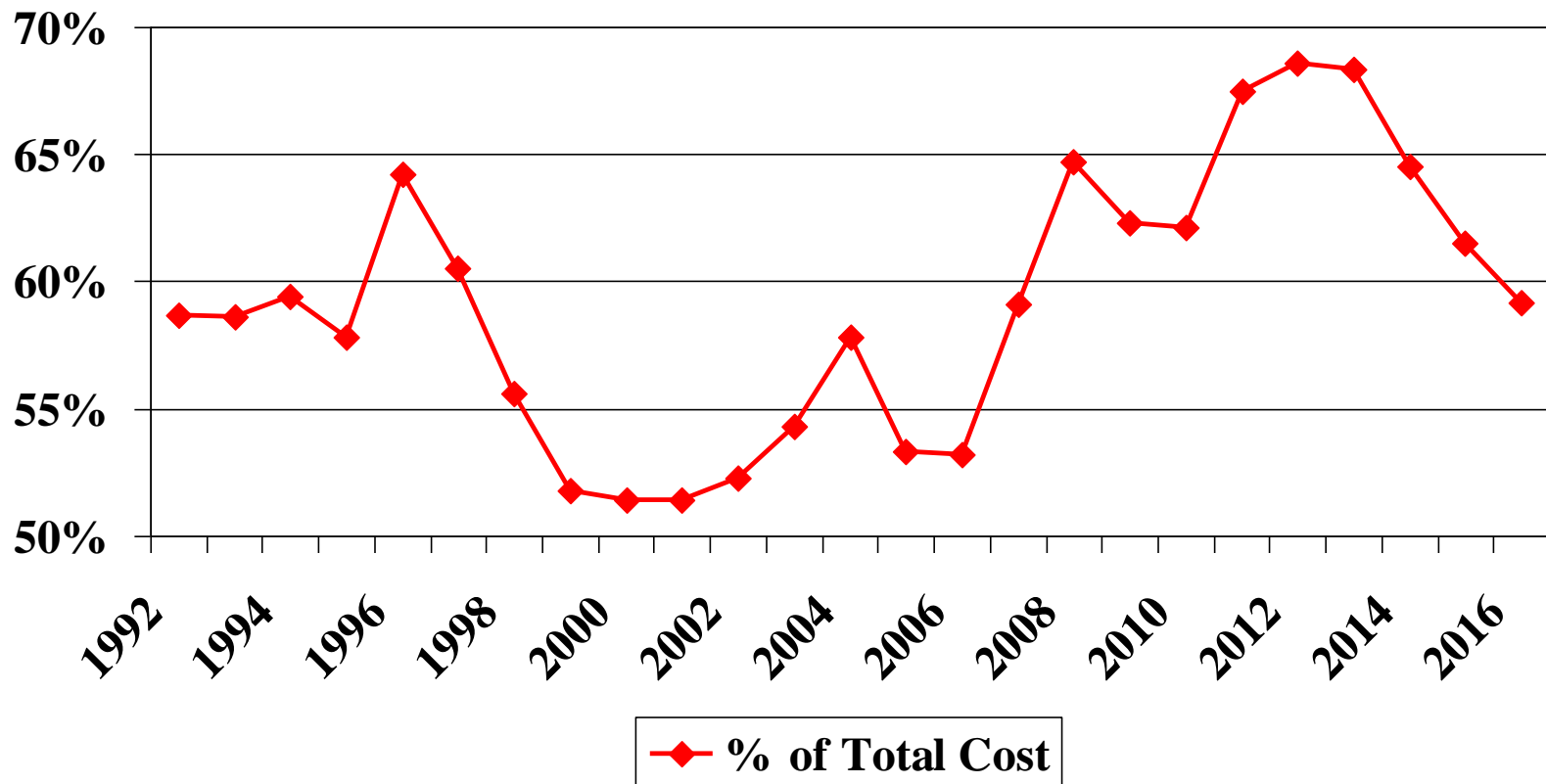
	<u>1.6 to 2.0</u> Kgs.	<u>2.4 to 2.7</u> Kgs.	<u>2.7 to 3.1</u> Kgs.	<u>3.1 to 3.4</u> Kgs.	<u>&gt;3.4 Kgs.</u>
2000	25.6 %	30.4 %	23.6 %	0	0
2005	21.6 %	29.2 %	15.2 %	12.8 %	14.2 %
2010	20.5 %	20.4 %	21.8 %	5.7 %	25.8 %
2015	16.6 %	7.5 %	19.9 %	11.9 %	37.1 %
½ 17	19.4%	8.2 %	15.6 %	15.8 %	34.9 %



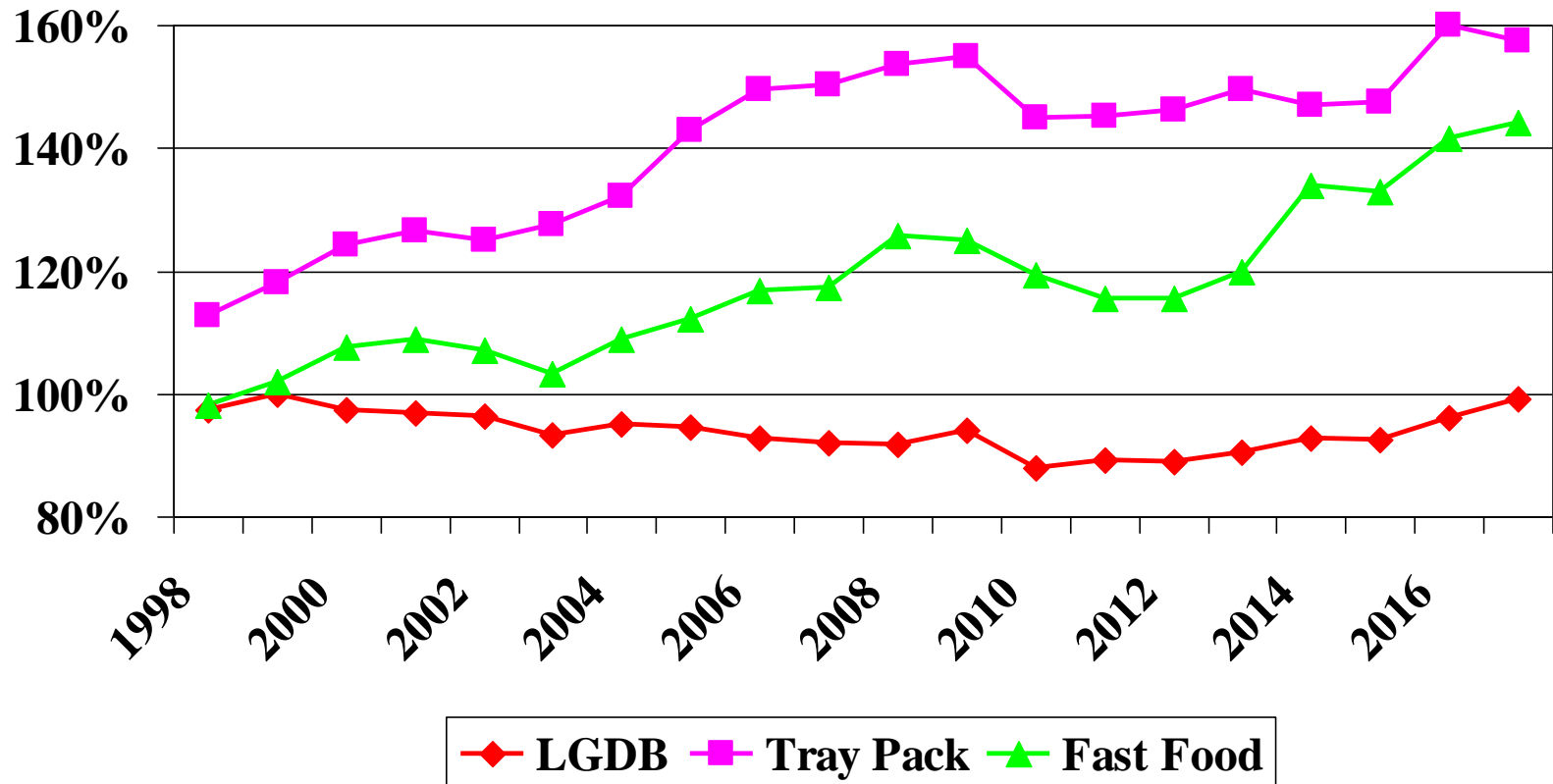
# Live Cost per Kg.



# Feed Cost as a Percentage of Total Live Cost U.S. Broiler Industry : 1992 to 2016



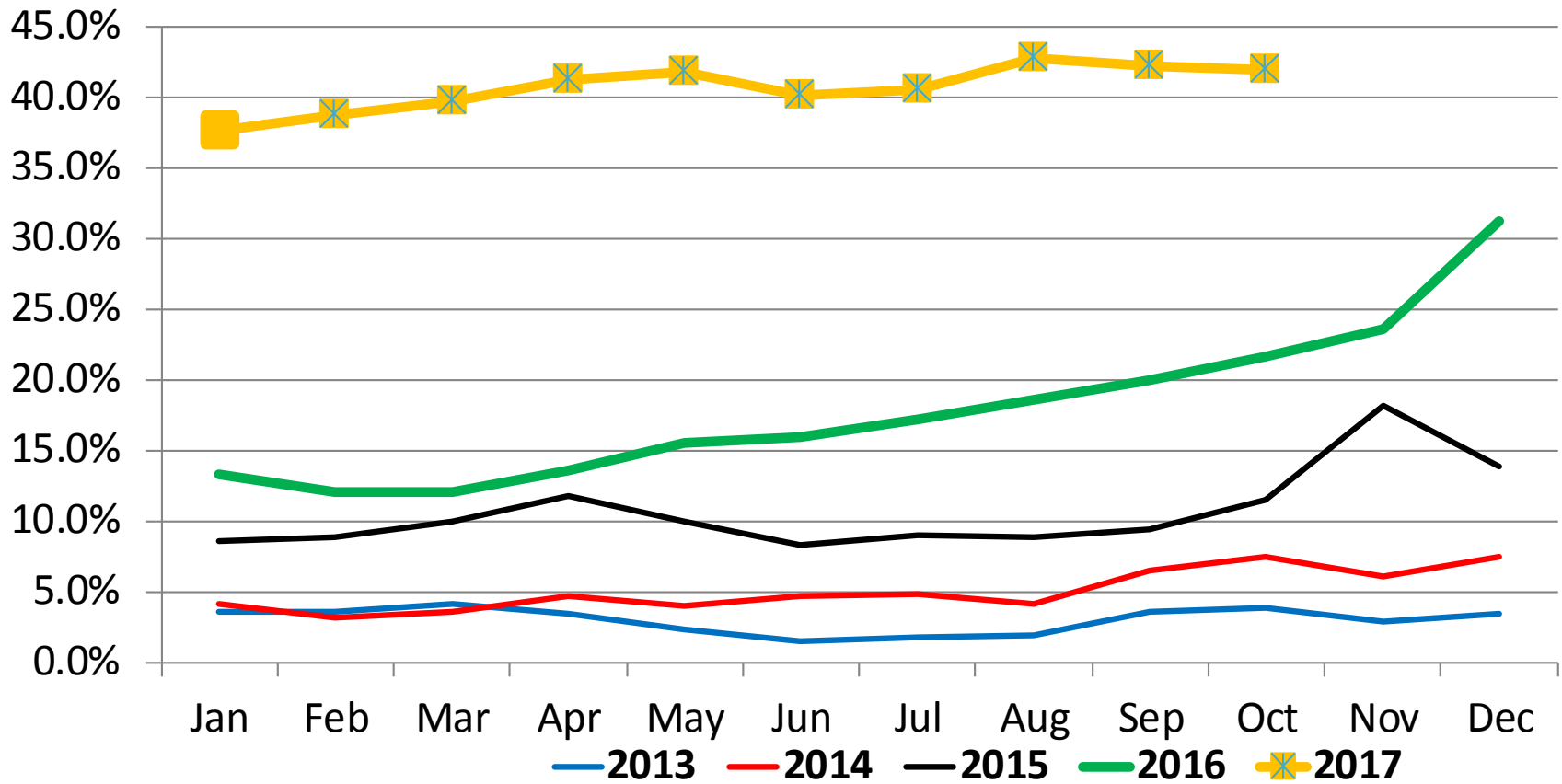
# Plant Cost as a % of Cost in 1997



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# Seasonal % of Birds fed without antibiotics important for human medicine or ionophores January 2013 through October 2017



# Feed Medication Programs : November 2017

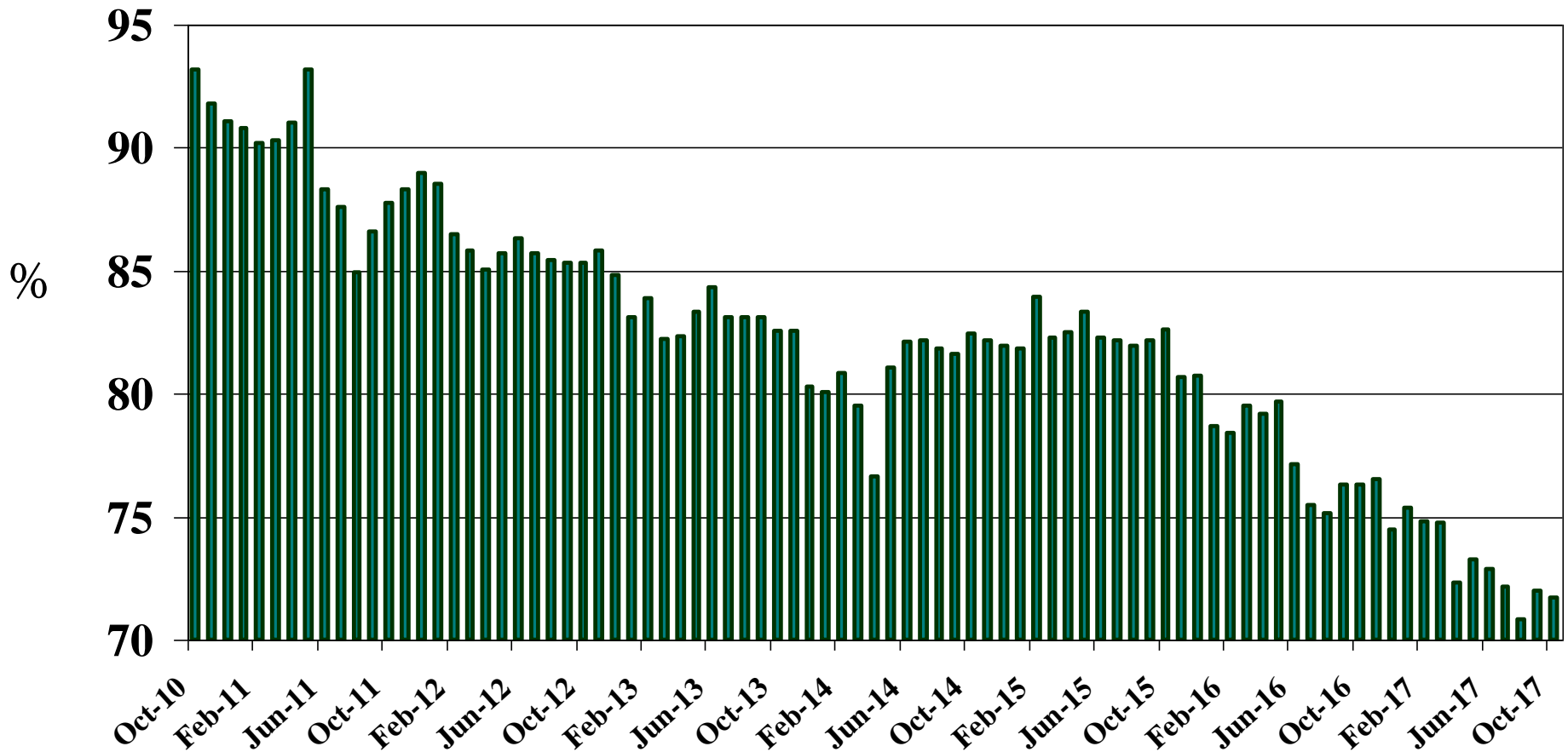
<b>ABF Prog</b>	<b><u>Adj Cal Conv</u></b>	<b><u>Days to 2.7 Kgs</u></b>	<b><u>% Mort</u></b>	<b><u>Avg. Live Wt</u></b>	<b><u>Birds (000)</u></b>
ABF (1)	5,607	45.88	4.55%	2.88	336,755
NAE (2)	5,614	45.84	4.49%	2.70	297,455
Traditional	5,523	45.45	4.27%	3.17	340,402

<b>Cocci Prog</b>	<b><u>Adj Cal Conv</u></b>	<b><u>Days to 2.7 Kgs</u></b>	<b><u>% Mort</u></b>	<b><u>Avg. Live Wt</u></b>	<b><u>Birds (000)</u></b>
Ionophore	5,528	45.46	4.20%	3.23	299,373
Chemical	5,618	45.92	4.20%	2.58	216,774
Vaccine	5,572	45.73	5.03%	3.21	161,607

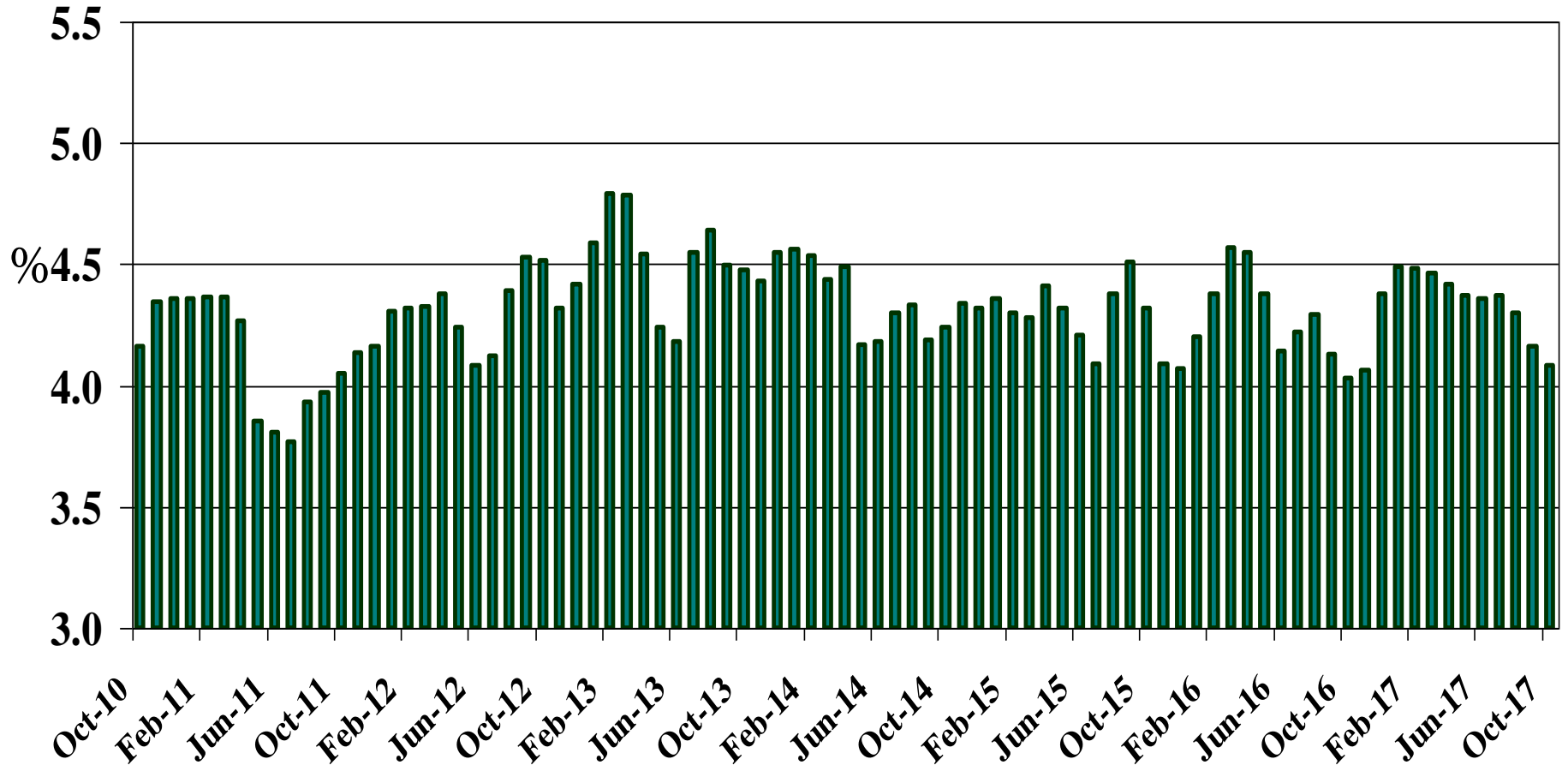
(1) No Health Maintenance Antibiotic incl. BMD, Virginiamycin, Tylosin

(2) No Health Maintenance Antibiotic or Ionophore Coccidiostat but can use a Chemical Coccidiostat or vaccine for coccidiosis control

# % Broiler Complexes Using Meat Products



# Broiler Average Inclusion of Meat Products



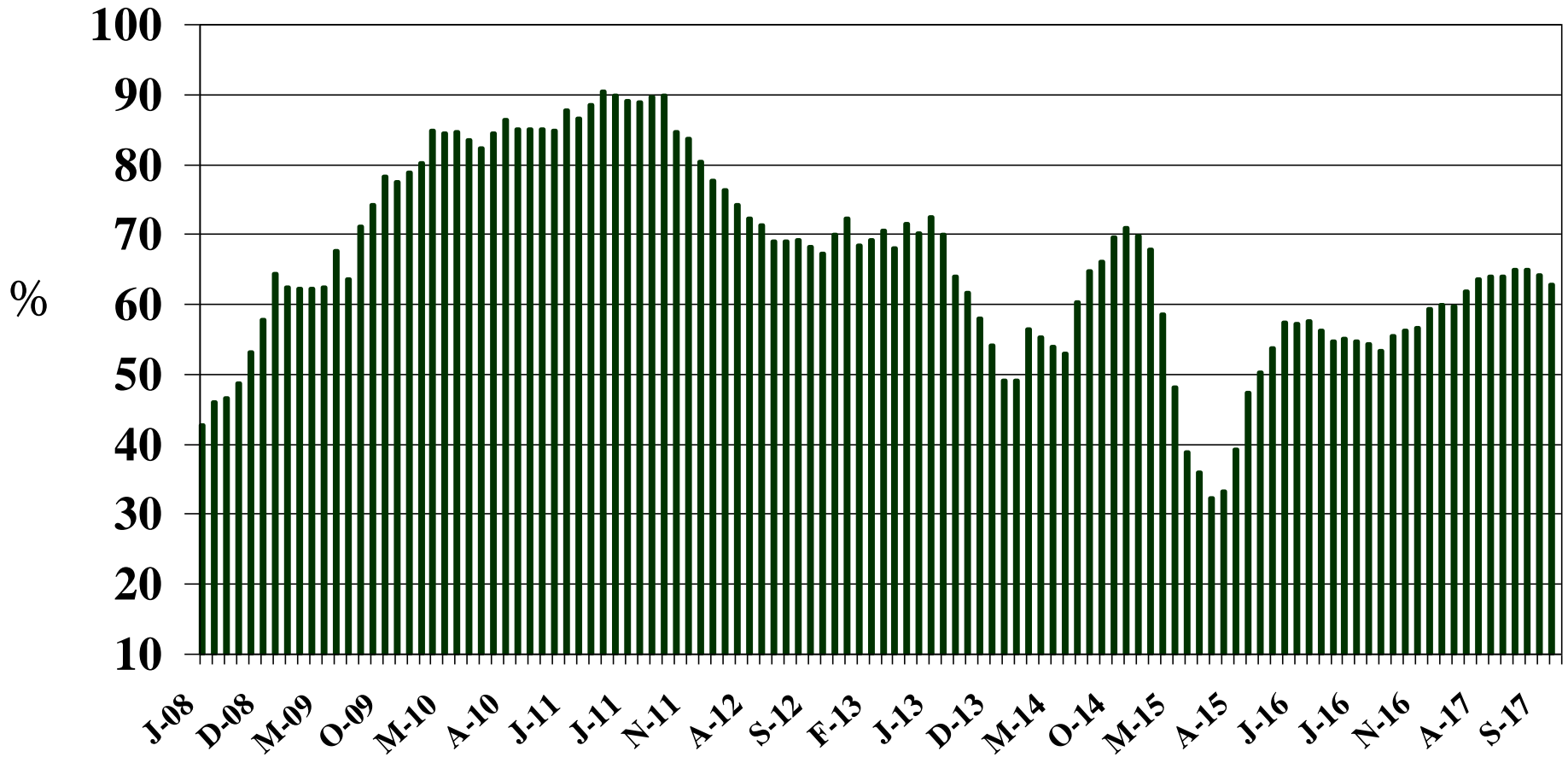


# Broiler Performance vs. % Animal Protein

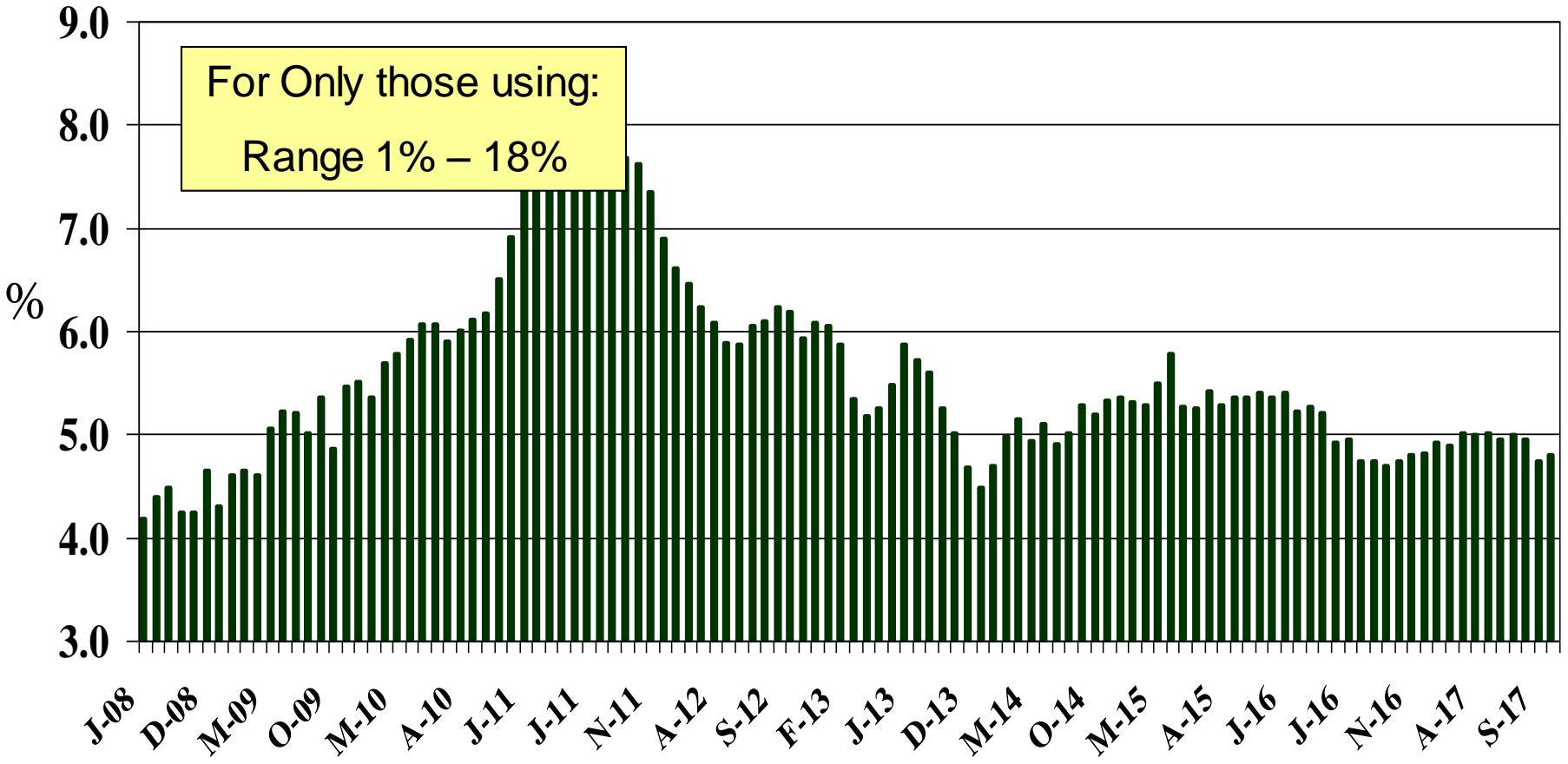
## March 2017– 2.4 to 3.2 kg. live Wt.

<b>% Animal Protein</b>	<b><u>Zero</u></b>	<b><u>0 to 2</u></b>	<b><u>2 to 4</u></b>	<b><u>&gt; 4</u></b>
<b>Adj. Feed Ing Cost</b>	<b>21.50</b>	<b>*</b>	<b>20.41</b>	<b>21.01</b>
<b>Adj. Cal Conv</b>	<b>5,728</b>	<b>*</b>	<b>5,570</b>	<b>5,647</b>
<b>Days to 2.7 kgs.</b>	<b>46.40</b>	<b>*</b>	<b>45.69</b>	<b>46.36</b>
<b>% Mort</b>	<b>5.52</b>	<b>*</b>	<b>4.60</b>	<b>4.99</b>
<b>Live Wt.</b>	<b>2.79</b>	<b>*</b>	<b>2.91</b>	<b>2.95</b>
<b>Cal/Lb. Feed</b>	<b>3,134</b>	<b>*</b>	<b>3,154</b>	<b>3,141</b>
<b>% Protein</b>	<b>19.90</b>	<b>*</b>	<b>19.52</b>	<b>20.12</b>
<b>% Lysine</b>	<b>1.22</b>	<b>*</b>	<b>1.19</b>	<b>1.20</b>
<b>% An. Protein</b>	<b>0</b>	<b>*</b>	<b>3.14</b>	<b>5.48</b>
<b>% Added Fat</b>	<b>2.09</b>	<b>*</b>	<b>1.63</b>	<b>1.38</b>
<b>% WOG Yield</b>	<b>78.17</b>	<b>*</b>	<b>79.30</b>	<b>79.22</b>
<b>% Bnls Yield</b>	<b>24.04</b>	<b>*</b>	<b>25.29</b>	<b>24.79</b>
<b># Complexes</b>	<b>20</b>	<b>1</b>	<b>13</b>	<b>11</b>

# % Broiler Complexes Using DDGS



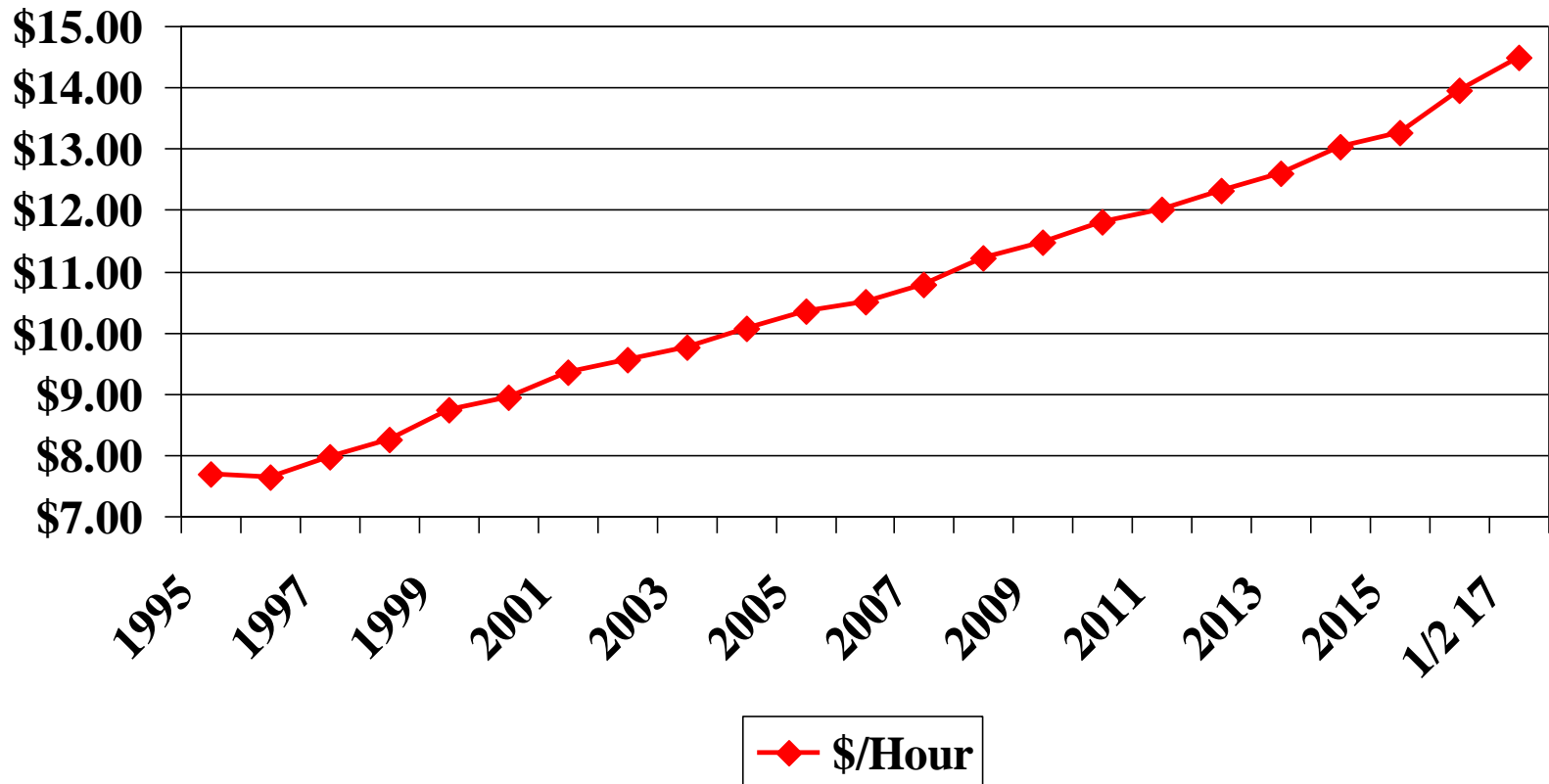
# Broiler Average Inclusion of DDGS



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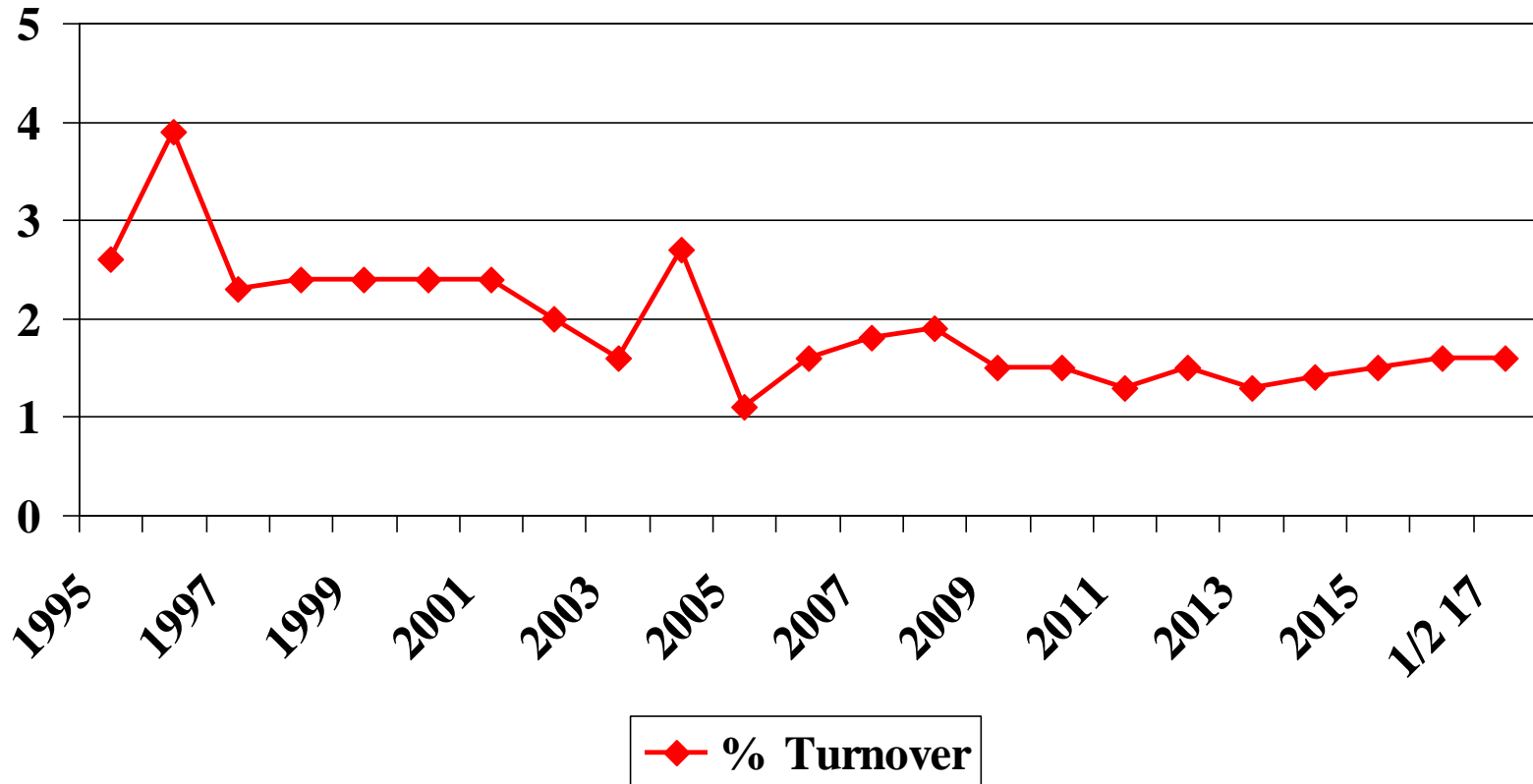
# Hourly Wage Rate without Benefits U.S. Broiler Industry



# Human Resources Trends

## U.S. Broiler Industry

### % Weekly Turnover in 1<sup>st</sup> Processing



# Slow Growing Broilers

- **Broiler Feed Conversion**
  - **Live Lbs. Produced 2015**
    - 49,012,810,953
    - Feed Conversion Ratio 1988 2.05
    - Feed Conversion Ratio 2015 1.89
  - **Tons of Feed Required 2015**
    - 46,317,106
  - **Tons of Feed Required @ 1988 FCR**
    - 50,238,131
  - **Additional Corn Acres needed @ 1988 FCR**
    - 578,743

# Slow Growing Broilers

- **Growth Rate**
  - **7,854,617 140 Birds grown in 2015**
    - Density : 12.4 birds per square meter
    - Growth Cycle to 2.83 kgs. in 2015: 63 days (incl. downtime)
    - Growth Cycle to 2.83 kgs. in 1988: 76 days (incl. downtime)
  - **Broiler Houses needed in 2015 : 32,727**
  - **Broiler Houses that would have been needed in 1998 : 39,480**
- **Houses needed : + 6,753**



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