Overview of the Broiler and Layer Industry in U.S.

Craig Coon
University of Arkansas

International Poultry Exposition
Westin Peachtree Plaza
Atlanta, GA
USSEC/USB/FAS
January 29, 2010

Broiler Integration in the U.S.

"Poultry industry represents the most vertically integrated sector of all of U.S. agriculture and food production and is rapidly progressing toward being one of the most concentrated as well……."

H.L. Goodwin, 2005

Broiler Integration in the U.S.

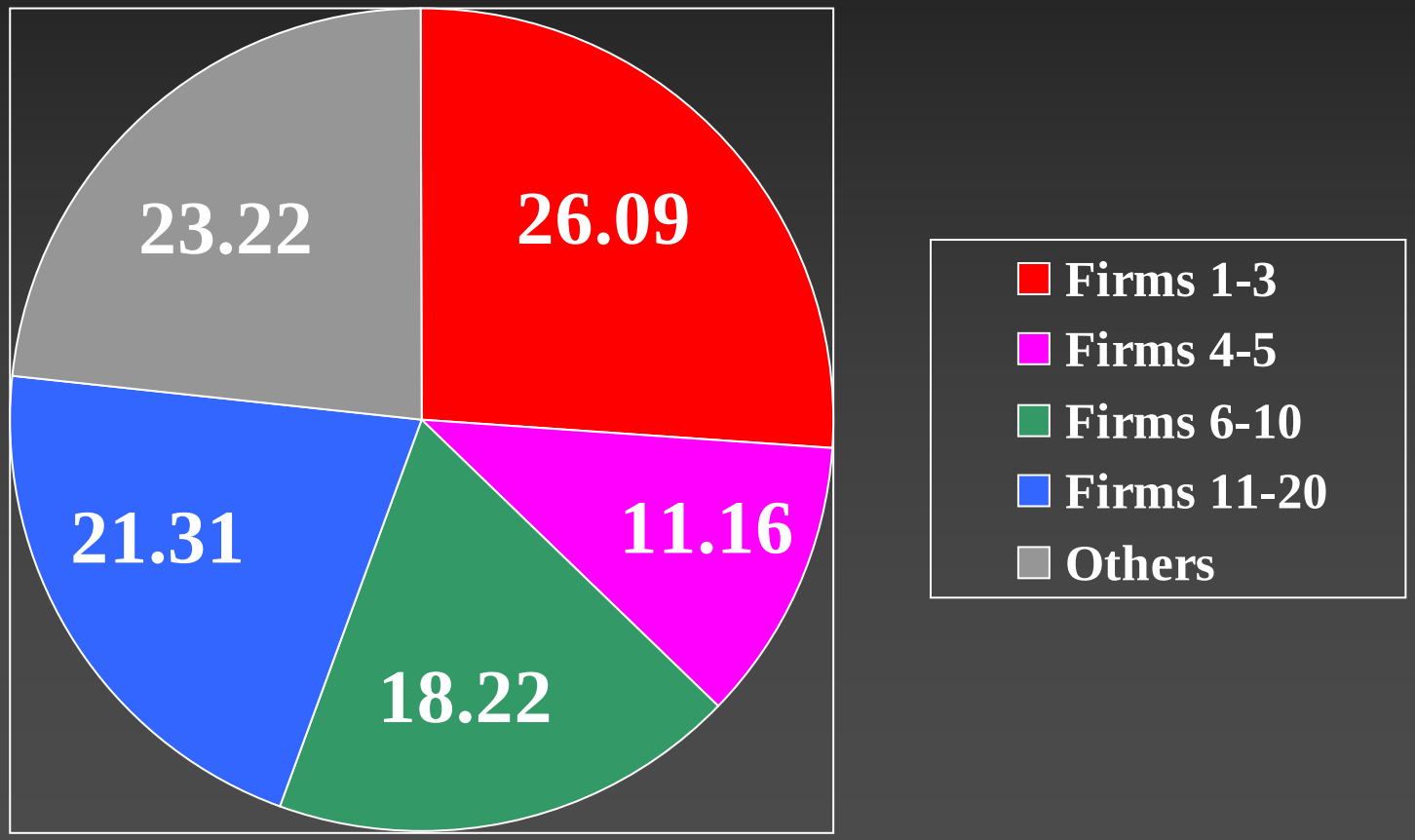
- In 1950, there were over 250 firms operating in the broiler industry; today there are fewer than 50.

- By 1960, 85% of all broiler production was vertically integrated

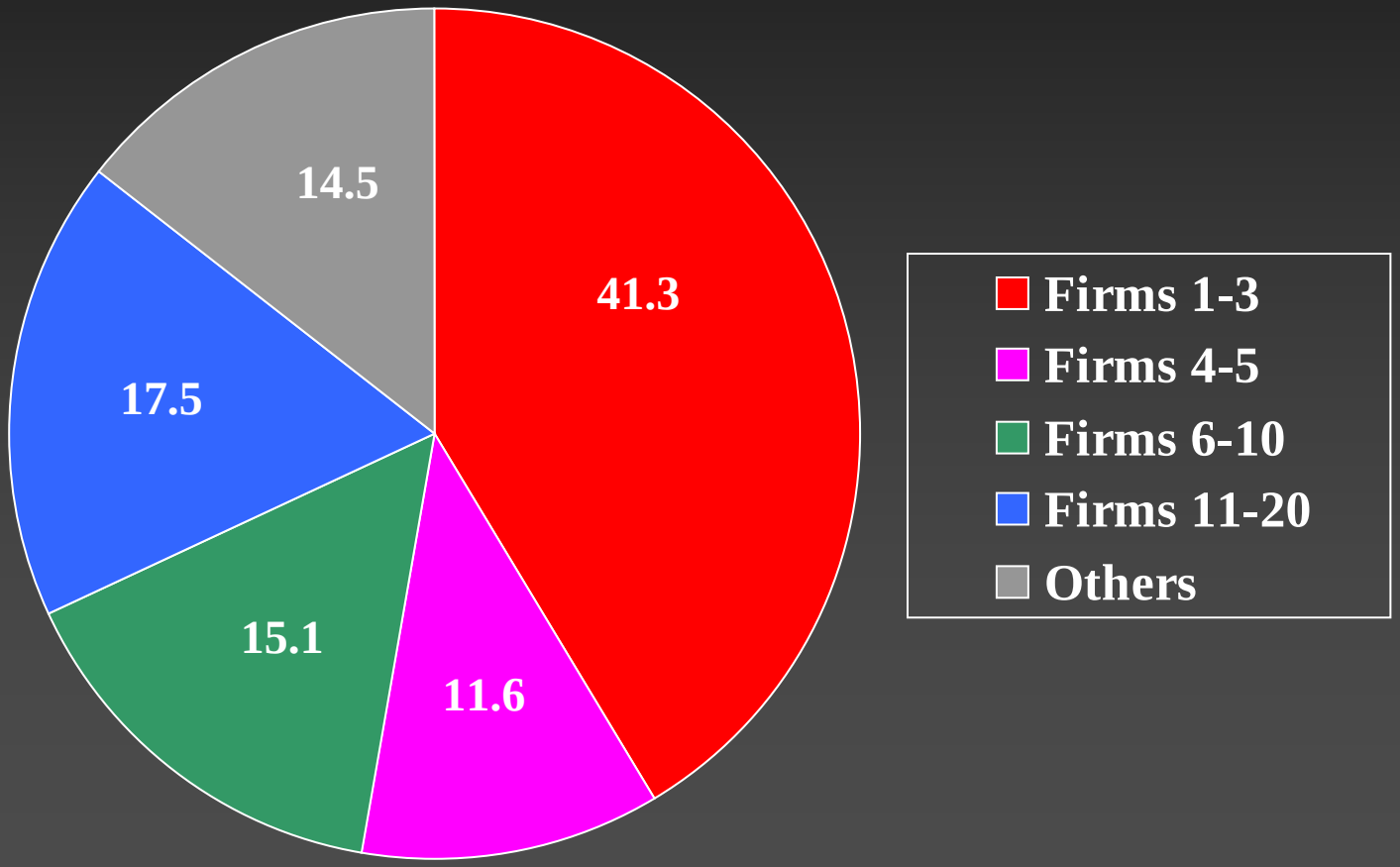
Broiler Industry

- Experienced tremendous growth and expansion in last decade
  - Annual growth rate of almost 5%
- Chicken most popular meat in market place
- Industry very aware that long term competitiveness depends on quantity and quality of end products
- U.S. Industry is cost driven

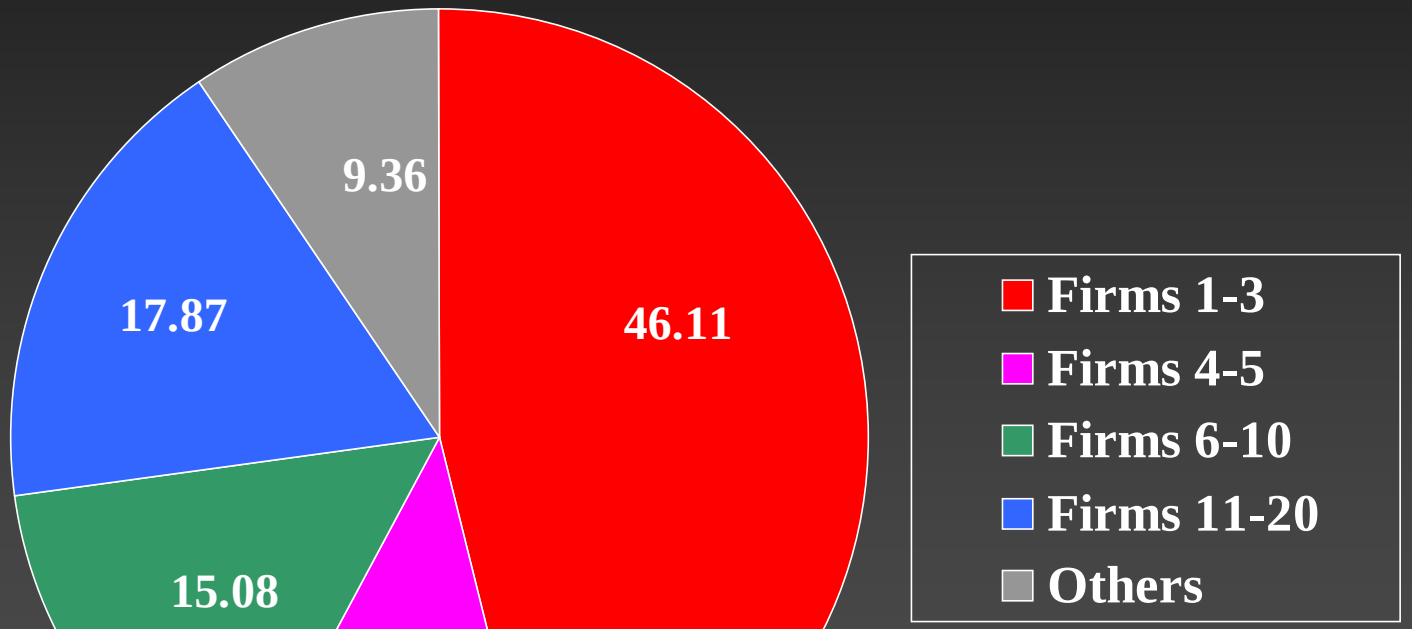
Broiler Industry Consolidation 1983



Broiler Industry Consolidation 1999



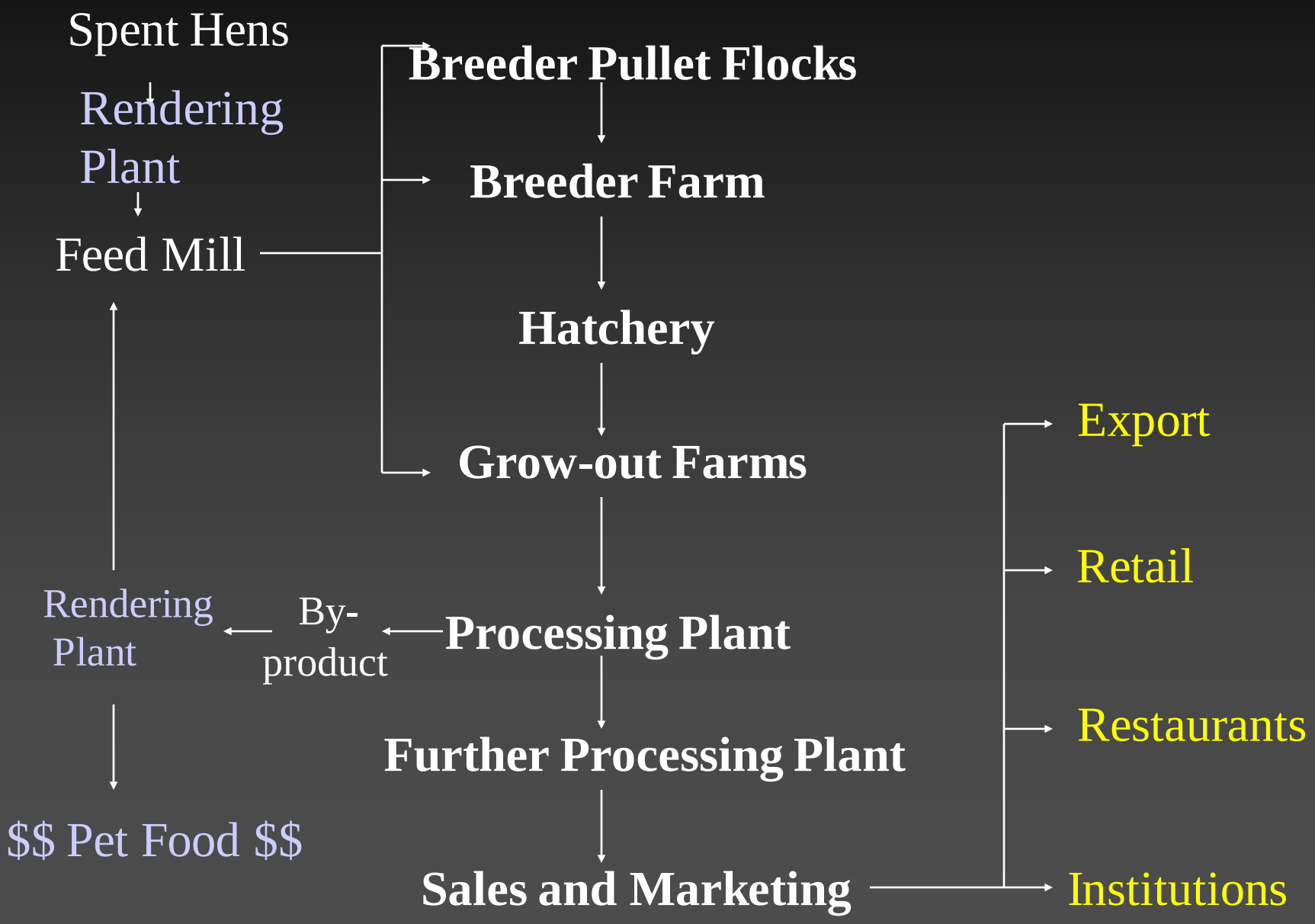
Broiler Industry Consolidation 2005



Vertical Stages of the Broiler Industry

- Breeder Farm
- Hatchery
- Feed Mill
- Broiler grow-out farm
- Processing plant
- Wholesale and Retail markets

Vertical Integration



What Drove Poultry Integration?

- Desire to ensure markets for products and services
  - Driven by large grain and feed companies and manufacturers
- Desire for profit retention by gaining other markets through expansion, acquisition, and consolidation
  - Driven by price competition for broilers at wholesale and retail levels

What drove Poultry Integration?

- Desire to manage price and production risk
  - Driven by diversity of inputs and outputs necessary for modern broiler production, as well as risks associated with diseases and production bio-security
  - Integrated firms have taken on an estimated 84% of all risks (standard deviation of price)
  - Contract growers have taken on management risks for broiler grow-out of 16% of all risks

What drove Poultry Integration?

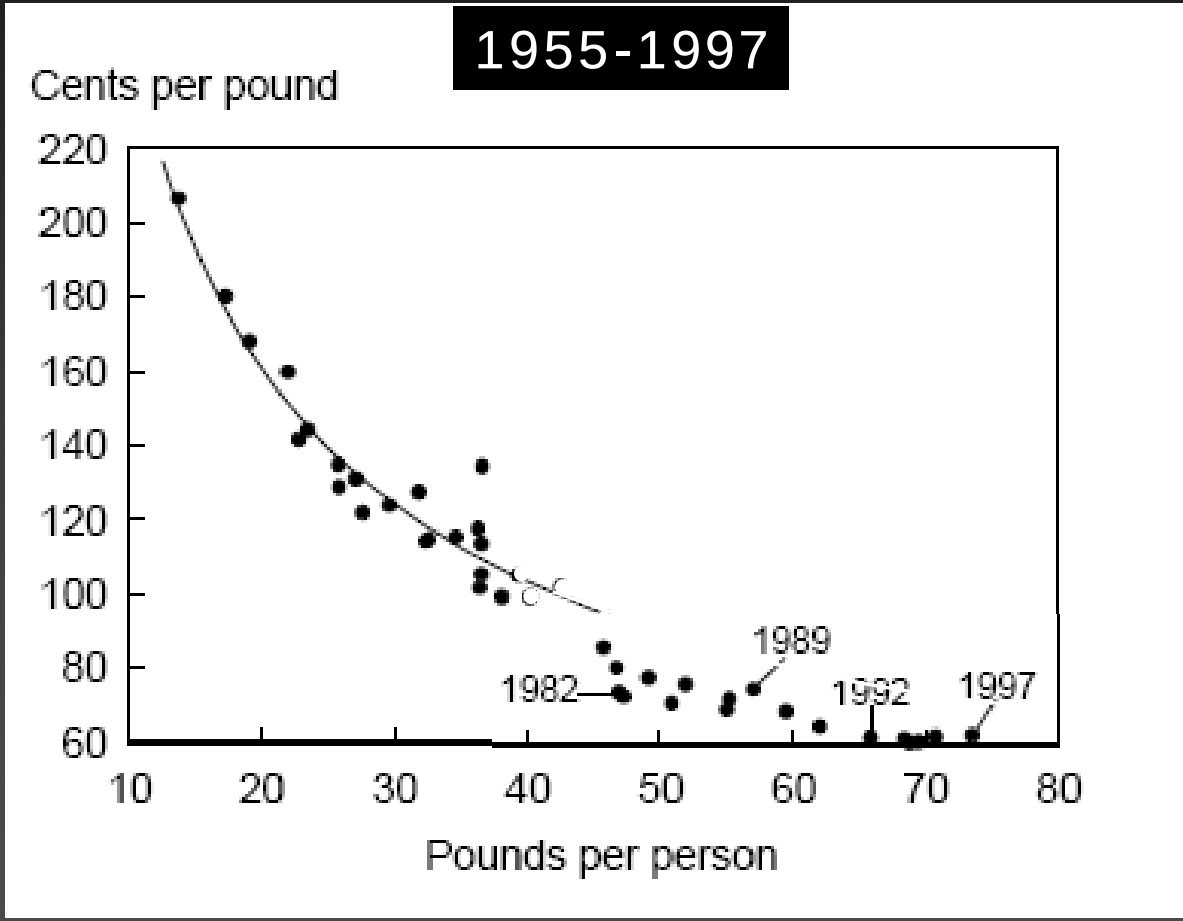
- Desire to limit capital necessary
  - Driven by development of contracts
  - save ½ of 180 million U.S. dollars needed for 500 broiler houses needed for a weekly output of 1.2 million broilers

What Really Happened?

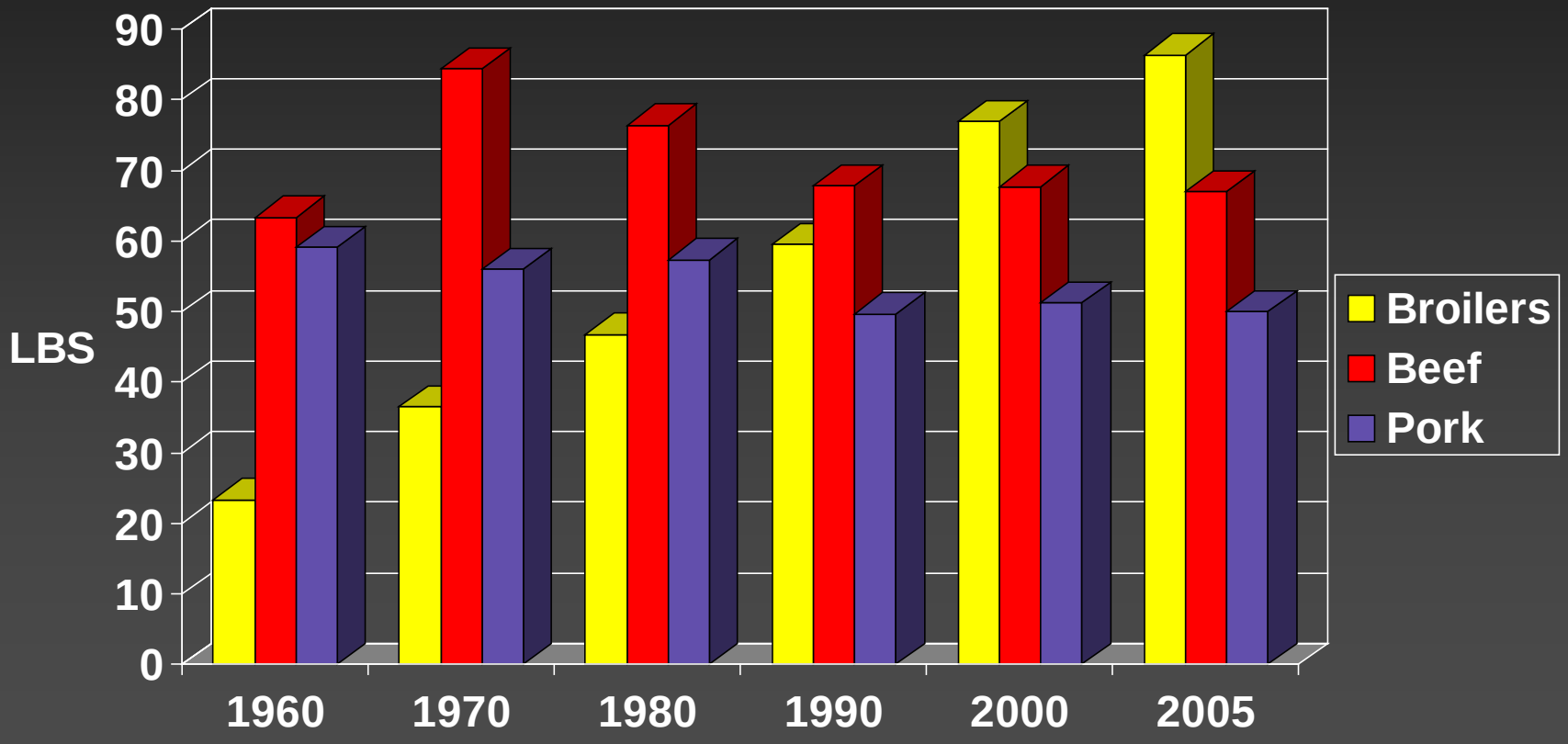
- In a very broad sense, chicken became:
  - More **A**ffordable
  - More **A**ppealing
  - More **A**vailable
- This was a “Triple AAA” bonus, enabled largely by effective integration of the industry.

Broiler Per Capita Consumption

source: USDA/ERS, AER 777



Per Capita Consumption of Meat (Retail Weight)



Why Was Chicken More Affordable?

- Improved genetics
- Improved nutrition
- Improved disease control
- Improved risk management
- Improved efficiency

Improvements in Chicken Performance

Year	Live weight (kg)	Age weeks	FCR	Mortality %
1925	0.954	16	4.7	18
1945	1.409	12	4.0	10
1965	1.591	9	2.4	6
1985	1.909	7	2.0	5
2005	2.409	6	1.7	4

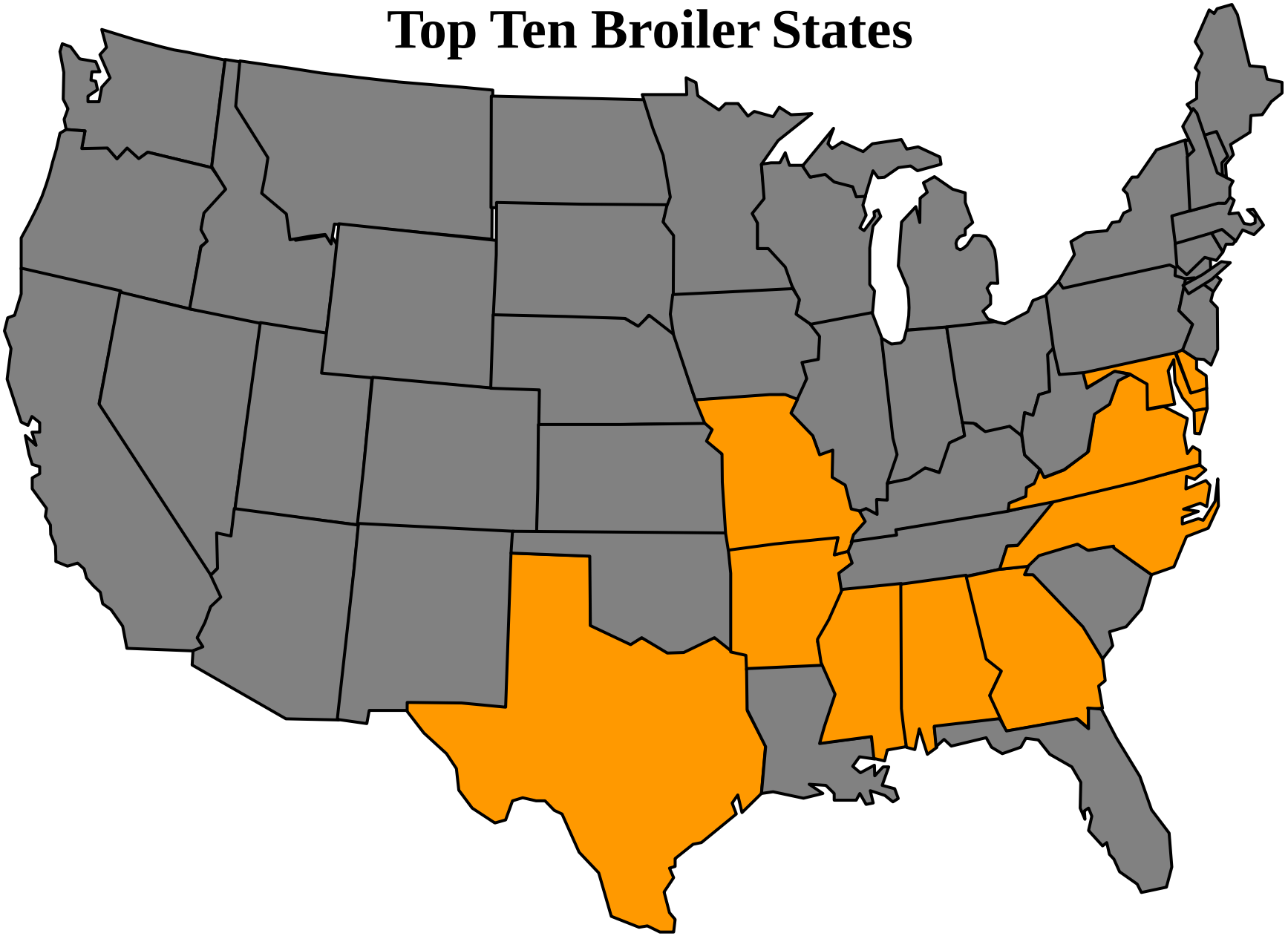
Why Was Chicken More Appealing?

- Variation in product form
- Increased product versatility
- Increased product convenience
- Improved product packaging

Why Was Chicken More Available?

- Fast food penetration
- Restaurant penetration
- Supply chain coordination
- Consumer identification
- Market segmentation

Top Ten Broiler States



2005 Top Five Broiler Producing States

	Production Value ($)
• Georgia	2,432,235,000
• Arkansas	2,237,586,000
• Alabama	2,004,132,000
• N. Carolina	1,681,040,000
• Mississippi	1,492,335,000

2005 Top Five Broiler Producing States

	Numbers Produced (1,000 Head)
• Georgia	1,247,300
• Arkansas	1,170,900
• Alabama	1,007,600
• Mississippi	765,300
• North Carolina	712,300

2005 Top Ten Companies

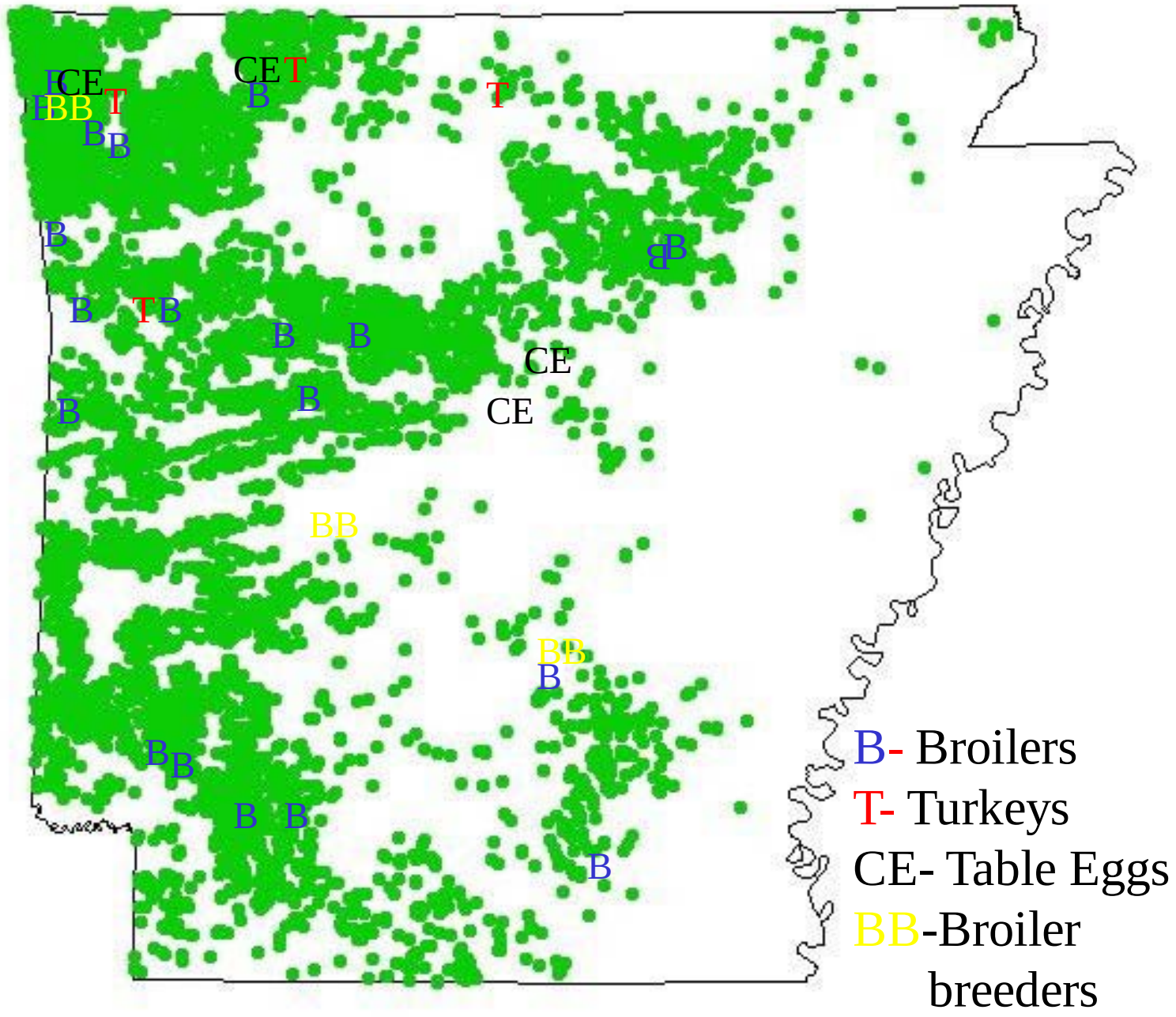
average weekly ready-to-cook (millions of pounds/week)

1.	Tyson Foods	150.00	46 mil/week
2.	Pilgrim's Pride	113.00	26.78
3.	Gold Kist	62.38	
4.	Perdue Farms	51.33	
5.	Wayne Farms, Conti	30.10	
6.	Sanderson Farms	30.39	5.21
7.	Mountaire Farms	25.34	
8.	Foster Farms	17.51	
9.	Peco Foods	17.18	5.05
10.	House of Raeford Farms	16.03	

Arkansas Poultry Companies
(millions of pounds/week)

11.	O, K, Foods Inc.	15.80	2.90 mil/week
12.	George's Inc.	14.39	
17.	Townsends, Inc.	12.10	
19.	Simmons Foods, Inc.	10.10	
25.	Peterson Farms	5.60	

Total number of U.S. broiler companies- 40



Location of Arkansas Poultry Production

Broiler Industry
Breeding Stock

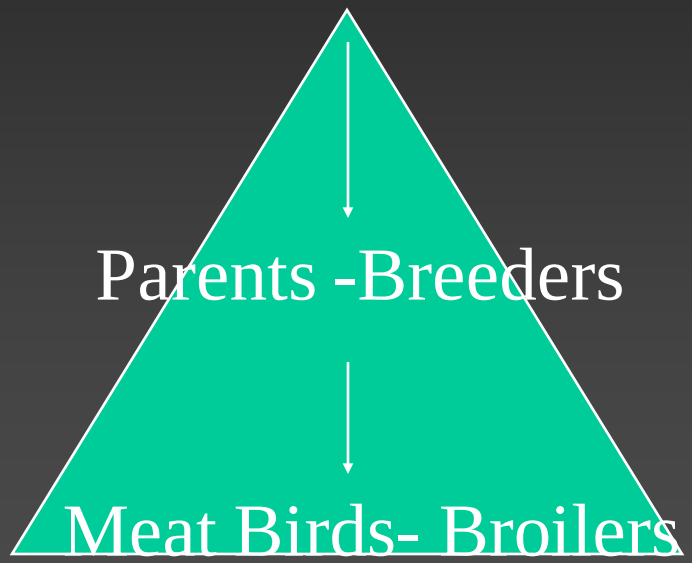
- Purchase male and female lines from commercial genetic companies
- Male-female breeder “packages” offer different end products such as high yield breast meat

Improvements in Broiler Performance

Year	Live weight (lbs)	Age weeks	FCR	Mortality %
1925	2.1	16	4.7	18
1945	3.1	12	4.0	10
1965	3.5	9	2.4	6
1985	4.2	7	2.0	5
2003	5.33	45.56 d	1.82	4.31
2008	5.84	43.96 d	1.78	5.01

Broiler Industry

Average cost		
$145 -$165	Great Grand-Parents	Genetic company 150 GGP
$35-$50	Grandparents	Genetic company 7500 GP
$3.50 – 5.50	Parents -Breeders	Poultry company 375,000 PS
26 ¢	Meat Birds- Broilers	Poultry company 48,750,000 B



Translates into 75,075 Tons of meat

Broiler Industry Structure

- Parent stock pullets and roosters reared on contract grower farms
- Moved to contract breeder farms at about 21 weeks of age
- Pullet growers paid on number of birds moved
- Breeder growers paid on number of settable eggs
- Company supplies feed, feeding schedule, pullet transportation, egg hauling vaccinations and medications

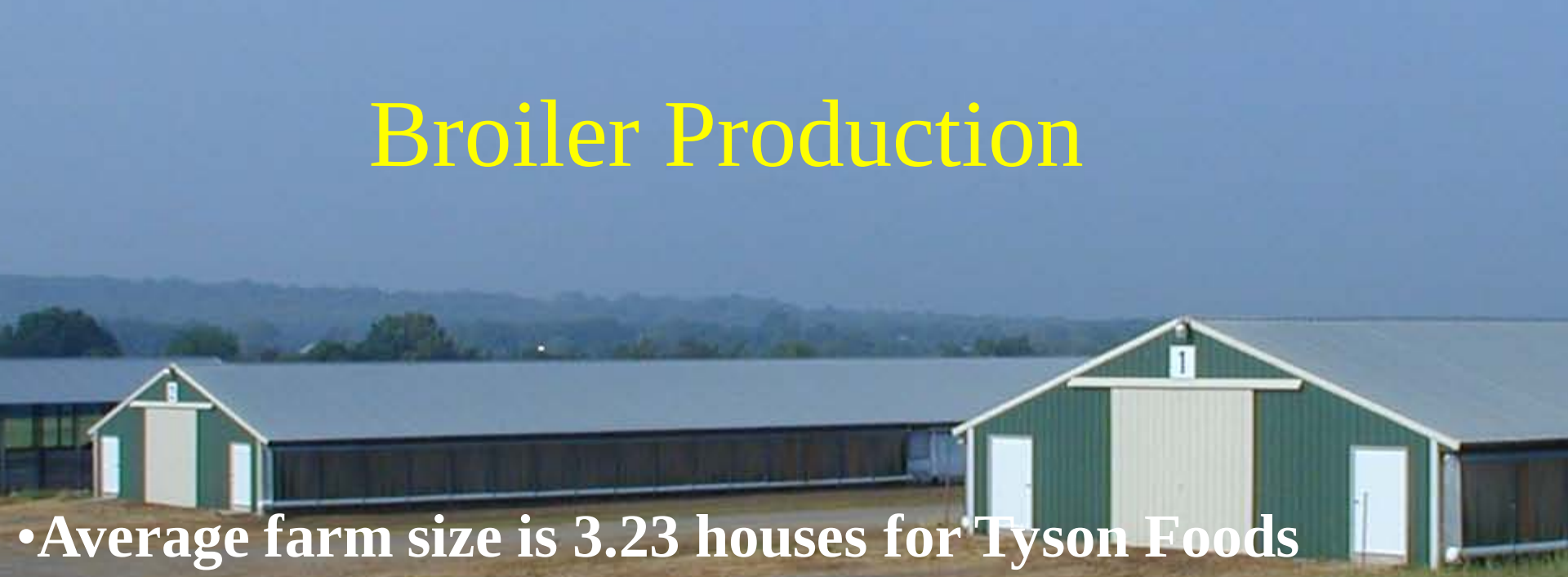
Hatchery

- Companies operate hatcheries with increasing emphasis on complete automation
  - Chicks and eggs never touched by human hands
- Eggs spend 18 days in setter
- Transferred to hatcher trays with suction cups
- Eggs vaccinated at transfer for Mareks and Gumboro (IBD) with Embrex technology
- Day 21- newly hatched chicks separated from shells
- Chicks automatically placed in boxes
- Spray cabinet for Bronchitis and Newcastle
- 1,000,000 plus hatch per week

Broiler Grow-out

- Newly hatched broiler chicks are transported to contract growers
- Growers care for and raise birds under supervision of technical service personnel
- Grower provides labor, properly equipped housing, insurance and utilities
- Company provides birds, feed, medication, technical support and load-out crew

Broiler Production



- **Average farm size is 3.23 houses for Tyson Foods**
- **Tyson Foods has 5,150 broiler farms with 17,500 houses**
- **Breeder flocks –1,450 farms in 2,900 houses**
- **Median number of flocks placed per farm is 5-6**
- **Median number of broiler farms per complex is 150-199**
- **Broiler farms with more than 100,00 birds per farm make up 93% of production for all of industry**

- Pilgrim's Pride Profile

Pilgrim's Pride

- 25 Broiler Complexes
- 36 Hatcheries
- 25 Feed mills- 275,500 tons/week
- 91 % of broilers grown under contract
- 3,450 farms – 12,900 houses


B 107

Feed Production

- Companies operate own feed manufacturing facilities and transport feed to farms
- Nutritionist formulates least cost ration which meets growth rate demands
- Current industry trend is to minimize nutrient excesses and medications to reduce costs
- Typical company may supply four to five different feeds throughout life of flock
- Tyson Foods has 35 feed mills and produces 290,00 tons of feed/week

Grower Returns Based On:

- Number of good pounds
- Average weight of flock
- Livability
- Feed conversion
- Medication costs
- Condemns at plant
    - Birds deemed unfit for human consumption according to USDA standards

Grower Returns

- Growers compete for pay scale based on average costs
- Most growers receive a gas allowance to offset heating costs during winter months
- Payment designed to provide return on investment in housing, equipment & labor
- Some companies provide incentive pay for housing and equipment upgrades

Grower Settlement

Prime Cost/pound= Chick cost+ Feed+Medication
Number of good pounds

PI= Performance Index

AV WT= Average Weight= Number of Pounds
Number of Birds

% CO=Condemn at Plant for air sac, leukosis, septicemia, bruising and other

Feed Conversion= Pounds of Feed/Pounds of Live Weight

Liv %= Percentage of Birds which Lived, Based on plant count

Example Grower Settlement 1

Prime Cost (¢/kg)	PI	Avg wt (kg)	Avg Age	Farm Con	Feed Conv	Liv %	Chicks Placed
27.5260	7	1.918	38	0.32	1.66	99.01	76500
27.5669	7	2.132	40.7	0.27	1.73	96.07	185470
27.6927	8	2.204	41.0	0.39	1.77	97.08	45333
28.0907	10	1.954	38.0	0.54	1.71	97.30	90000
28.1494	10	2.154	41.0	0.64	1.80	97.24	158900
28.2858	11	1.954	38.0	0.65	1.69	93.36	91134
29.1302	14	1.964	41.0	0.54	1.80	96.66	150400
29.3418	15	1.954	40.3	0.57	1.82	96.78	228904
29.4208	16	2.014	41.8	1.03	1.84	96.32	249857

Week ending 5/20/2006 **Small Bird**

Example Grower Settlement 2

Prime Cost (¢/kg)	PI	Avg wt	Avg Age	Farm Con	Feed Conv	Liv %	Chicks Placed
26.9474	7	6.27	49.2	0.71	1.87	97.64	283555
27.0301	7	6.34	49.2	0.67	1.88	97.05	138246
27.3810	9	6.06	48.9	0.68	1.89	97.40	288734
27.4386	9	6.08	48.5	0.96	1.88	95.69	86037
27.6041	10	5.95	48.3	0.76	1.90	96.65	196526
27.7209	11	5.97	48.9	0.72	1.91	96.81	102681
28.1965	13	5.07	43.0	0.84	1.84	96.59	240419
28.2856	13	5.91	49.0	0.76	1.95	96.24	274057
28.305	13	5.92	49.2	0.78	1.95	96.16	274776

Week ending 08/21/08 **Large Bird**

University of Arkansas Research Facilities

Paid as Contract Broiler Grower by Local Integrator

Ranking of 13 Contract Growers by Integrator

PC/kg U.S.(cents)	PI	Wt Kg	Age	Farm Cd %	FCR	% Liv	C No 1000
27.248	8	2.12	38	.35	1.71	97.2	90.8
27.286	8	2.09	39	.34	1.71	98.2	75.9
27.7259	10						
28.758	15	1.84	38.2	.48	1.74	97.5	160.5
28.830	15	1.94	39	.74	1.76	95.1	67.5

Live Production for Grower

Chicks Placed	90,900
Birds Processed	88,238
Livability	97.07
Feed Used (Kg)	320,390
Kg LBW moved	186,845
Condem. (Kg), No., %	658.6, 311, .35
Feed Conversion	1.72

Grower Paid on Good Body Wt
Kg BW moved – Kg Condem.

Ave Broiler Wt. (Kg)	2.117
Age at Processing	38.0
Good “Kg” Wt	186,187

Grower Payment

Cost	Total U.S.D. ($)	U.S.¢/Kg LW (good wt.)
Chicks (17 ¢)ea	15,453.29	8.2997
Feed (11 ¢/kg)	35,243.00	18.9288
Med.	54.28	0.0293
Prime Cost	50,750.28	27.2578
Middle Gr Costs		27.7259 (8.8¢/kg for middle grower)
Diff from MGr		-0.4681
Gross Gr Pay	17,256.09	**9.2682**
Grower Pay+ Inc	22,961.81	**12.3328** (Incentives are 3.0646 ¢/kg)

2005 Live Production

	Cost/Kg (U.S. ¢)	Bird Weight (kg)	Bird Age (Days)	Livability %
Average Company	57.97	2.596	49.17	95.01
Top 25%	54.71	2.432	46.88	95.75
Top 5	52.84	2.291	43.37	96.54

January through December 2005 Average values

2006 Live Production

	Cost/Kg (U.S. ¢)	Bird Weight (kg)	Bird Age (Days)	Livability %
Average Company	59.642	2.641	49.36	95.27
Top 25%	56.232	2.504	47.25	96.00
Top 5	54.318	2.264	43.79	95.57

January through December 2006 Average values

2007 Live Production

	Cost/Kg (U.S. ¢)	Bird Weight (kg)	Bird Age (Days)	Livability %
Average Company	70.642	2.696	49.90	95.55
Top 25%	67.188	2.509	46.91	96.19
Top 5	65.01	2.318	44.68	96.33

January through December 2007 Average values

2008 Live Production

	Cost/Kg (U.S. ¢)	Bird Weight (kg)	Bird Age (Days)	Livability %
Average Company	86.31	2.6545	49.39	94.99
Top 25%	81.29	2.6273	48.55	95.49
Top 5	77.35	2.5591	46.70	95.96

January through August 2008 Average values

2009 Live Production

	Cost/Kg (U.S. ¢)	Bird Weight (kg)	Bird Age (Days)	Livability %
Average Company	80.81	2.64	48.48	95.52
Top 25%	76.36	2.63	48.31	95.98
Top 5	74.47	2.45	46.47	95.49

January through August 2009 Average values

2009 Broiler Production Costs (cents)U.S.D./KG Live weight

Broiler hatching egg	17.2 ($2.06/doz)
Baby chick delivered	25.99-------11.18/kg LW
Feed	49.456
Milling and delivery	3.036
Vet and med	0.11
Catching and hauling	3.124
Supervisory	0.44
Grower pay-out	12.65
Total Costs	80.81

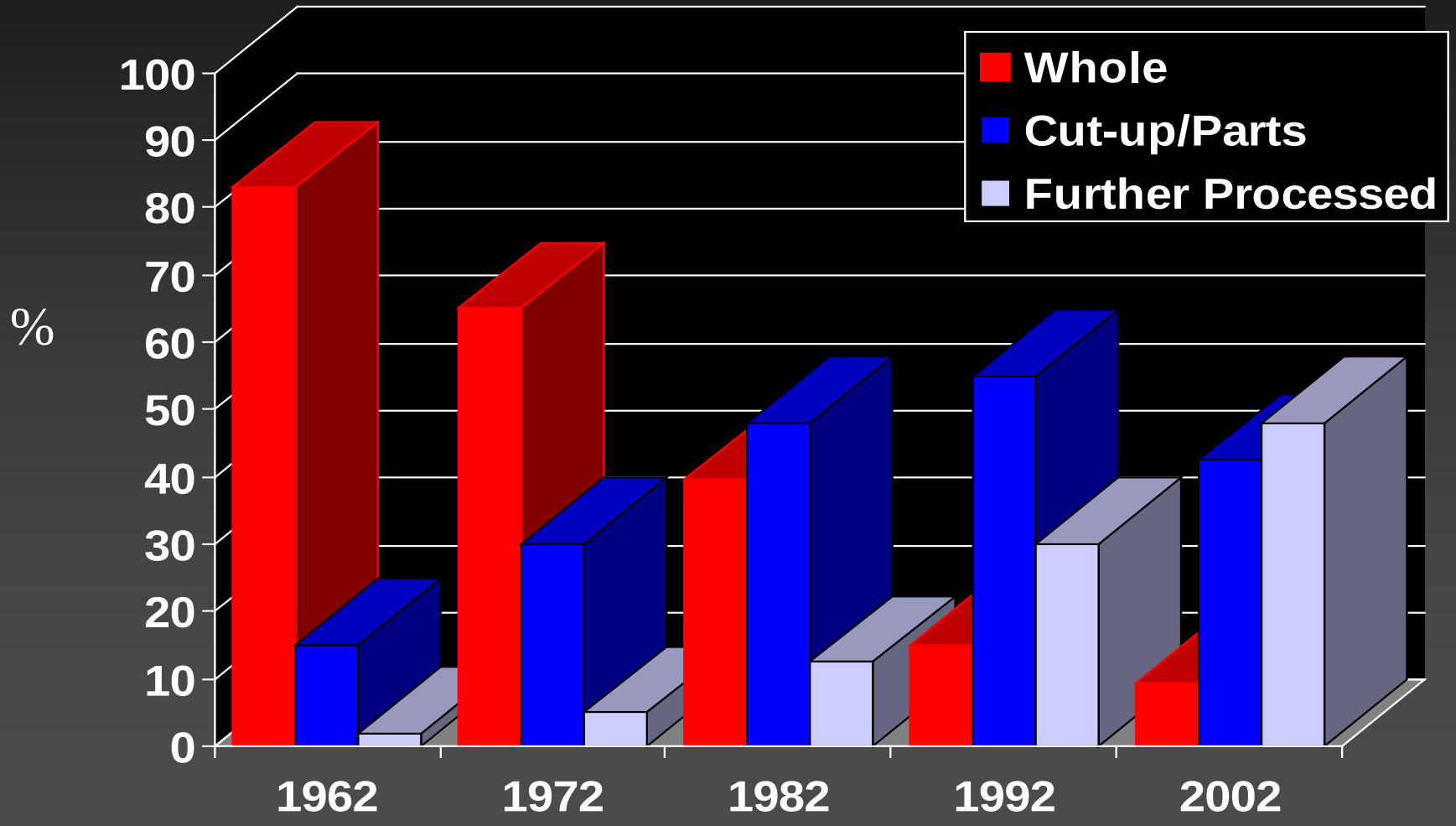
Broiler Industry
Slaughter Plant/Processor

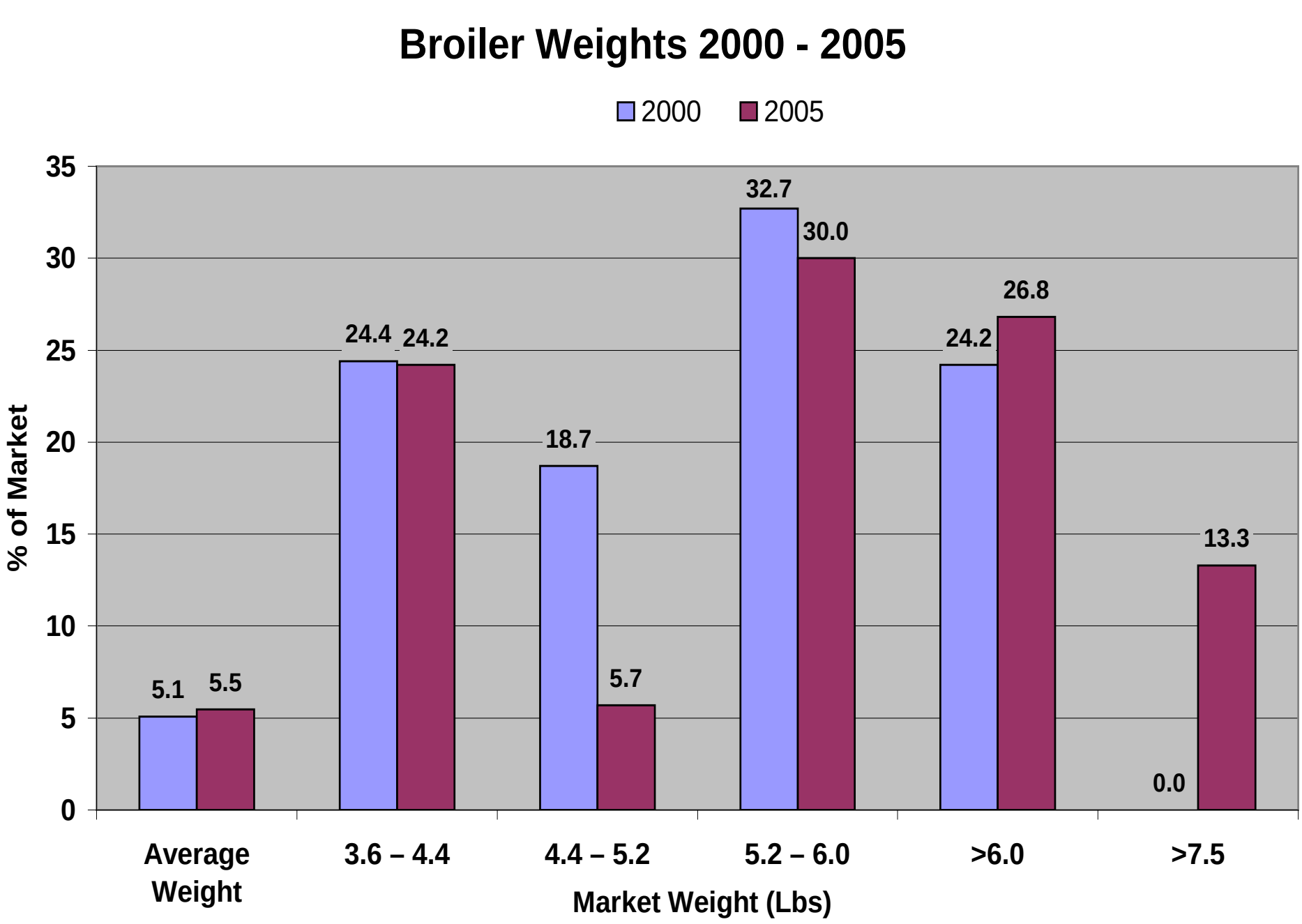
- Birds transported to plant at market weight
- 10-12 hour feed withdrawal
  - Helps to minimize feed and fecal contamination
- HACCP- Food safety process which minimizes biological, physical and chemical contamination (Salmonella down 10.7 from 20% pre HACCP)
- Company responsible for safety controls
- Government through USDA checks company records and monitors pathogen levels

Further Processor and Marketing

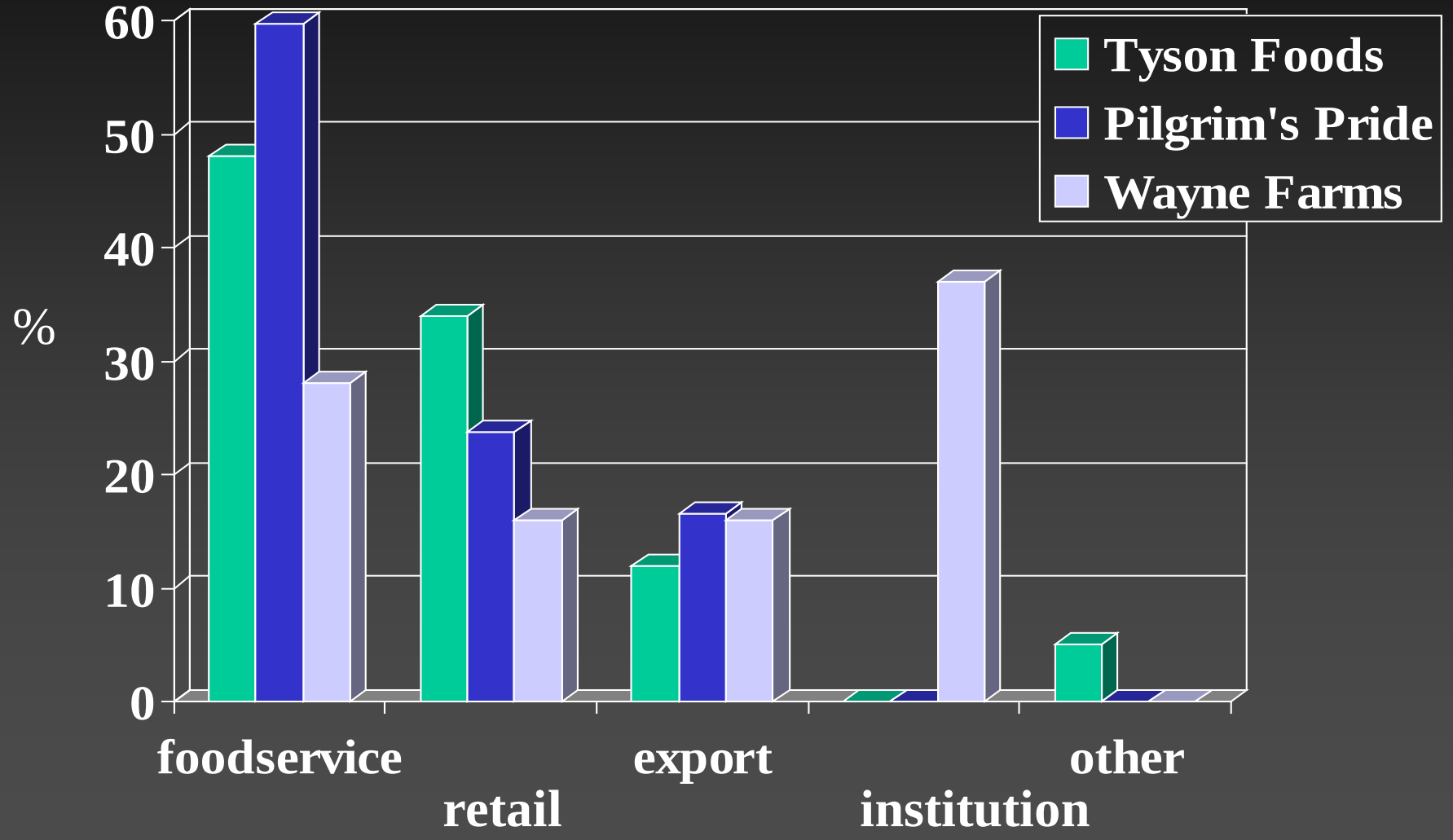
- Changed industry from commodity to value added products
- Target niche markets- restaurants, institutions and whole sale stores
- Tyson Foods develops 50-60 new products annually to maintain strong demand by consumers
- TF offers 4,892 products
- “Convenience for the customer” (NCC May 2002)
- 2002-Chicken tops list of best fast foods- Nutrition watchdog Center of Science for Public Interest

How Broilers Are Marketed

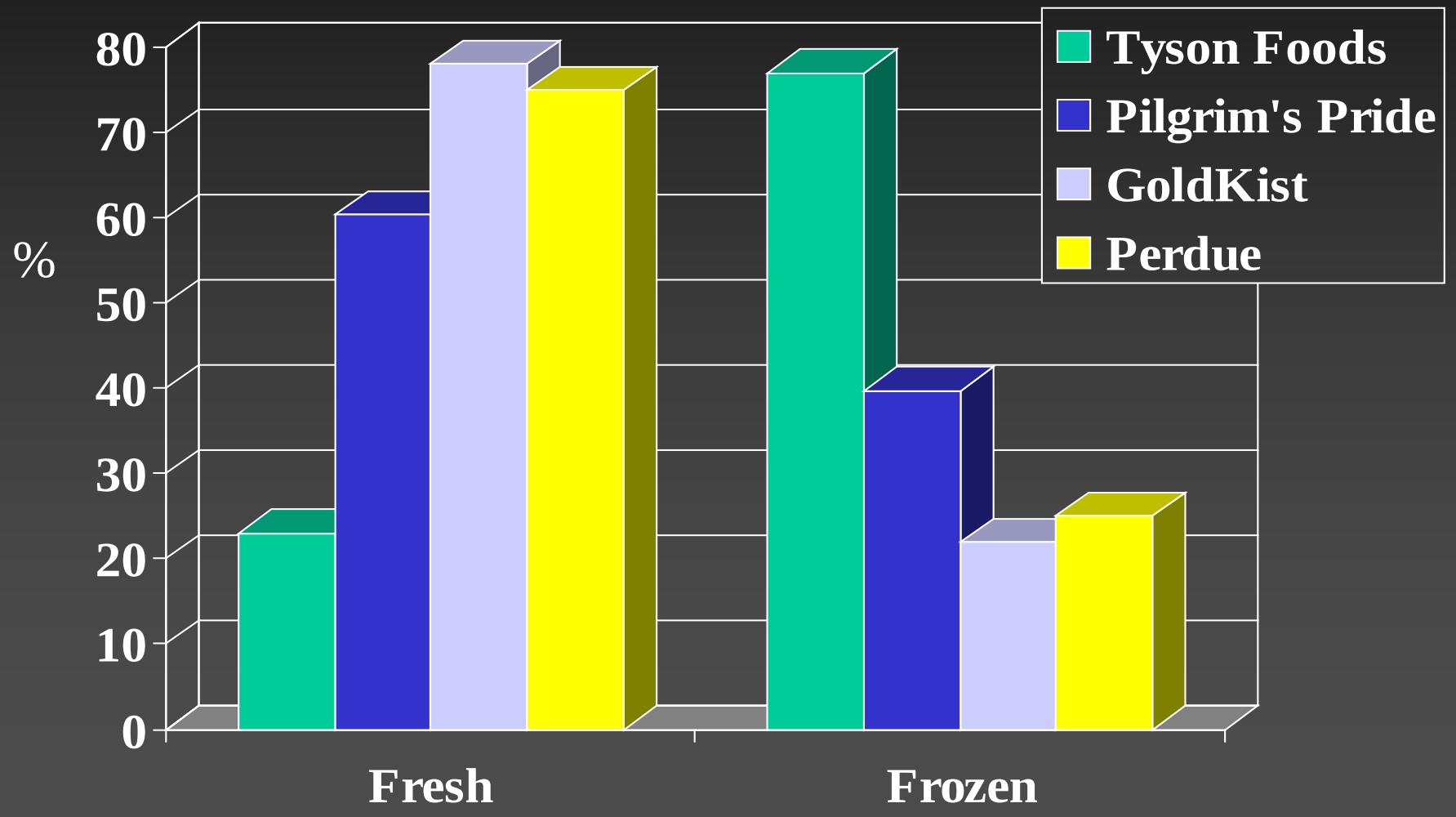



Broiler Weights 2000 - 2005
2000
2005
% of Market
35
30
25
20
15
10
5
0
5.1
5.5
24.4
24.2
18.7
5.7
32.7
30.0
24.2
26.8
0.0
13.3
Average Weight
3.6 – 4.4
4.4 – 5.2
5.2 – 6.0
>6.0
>7.5
Market Weight (Lbs)

Markets


60
50
40
30
20
10
0
%
Tyson Foods
Pilgrim's Pride
Wayne Farms
foodservice
retail
export
institution
other

Product Forms




INSPECTED
U.S.
FULLY COOKED
KEEP FROZEN
Tyson
SERVING SUGGESTION
TYSON HOLLY FARMS
Holly Farms
PREMIUM CHICKEN
No fillers.
No preservatives.
No artificial
flavors.
Honey Battered
Breast Tenders
NET WT.
9 OZ. (255g)
Breaded Chicken Formed with Rib Meat

Tyson®

Barbecue Style Chicken Wings

Glazed Chicken Wing Sections

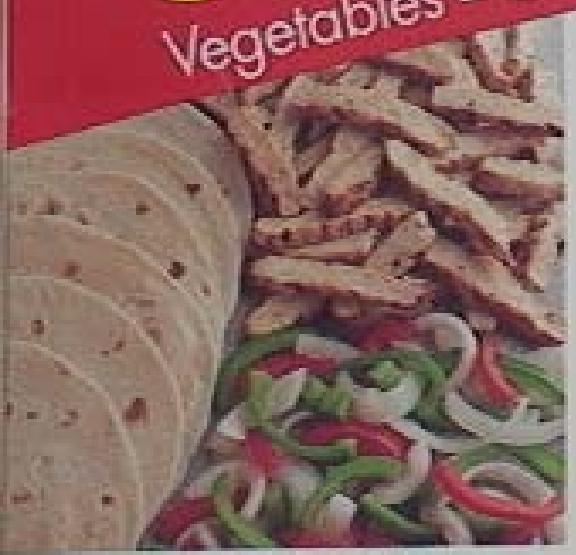
MICROWAVEABLE

READY IN 8 MINUTES ■ FULLY COOKED ■ KEEP FROZEN

Tyson®

CHICKEN FAJITA KIT

Vegetables ■ Chicken Breast with Rib Meat Strips ■ Flour Tortillas



MICROWAVEABLE

NET WT. 24.24 OZ. (1.51 LB.)

INSPECTED U.S.

MAKES 6 FAJITAS!

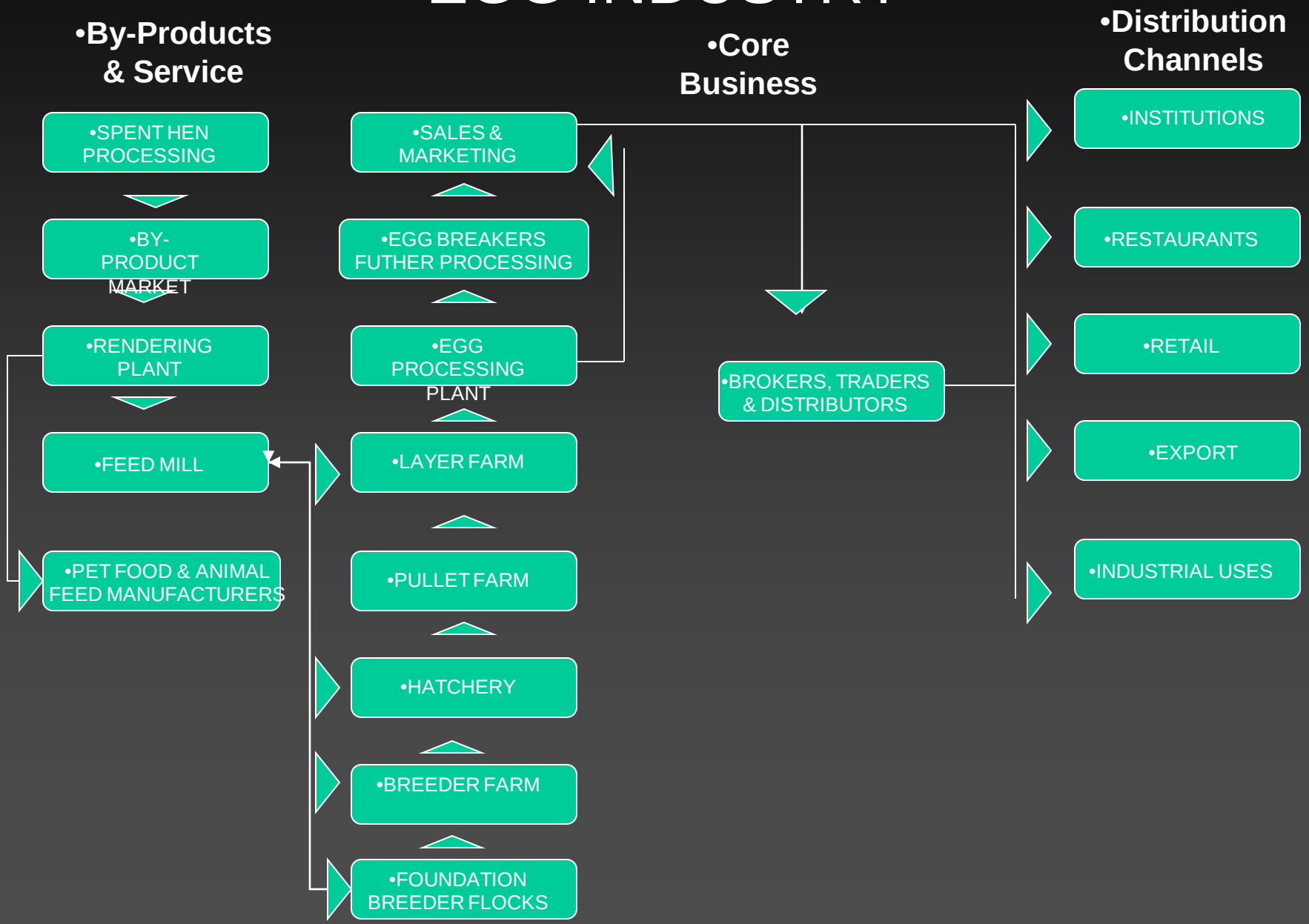
Broiler Industry-Summary

- Vertical Integration allows company control of product and costs of production
- Contract producers shifts burden of production facilities away from company
- Development of value added products has increased cost of processing but stabilized market

Commercial Egg

- Buy day-old pullets from genetic companies
- Raise in company owned cage facilities
- Raise pullets to production age (16-18 weeks)
- Transfer birds to concentrated layer facilities
- Many companies have million bird complexes
- Birds remain in production as long as 110 weeks

•Vertical Structure of the •EGG INDUSTRY



Commercial Egg Production

- Egg companies have greatest cost of three industries for production facilities
- Lowest cost of three industries for processing facilities
- Egg industry has remained a commodity supplier and is very much dependent on supply and demand for price of product

Commercial Egg Industry

- Majority of layers found on farms having more than 100,000 layers.
- 61 egg firms account for 75% of the number of birds

Two Holding Companies Own all Layer Genetics

EW Group-Germany

- Hy-Line
- Lohmann
- H&N

Hendrix Group-Netherlands

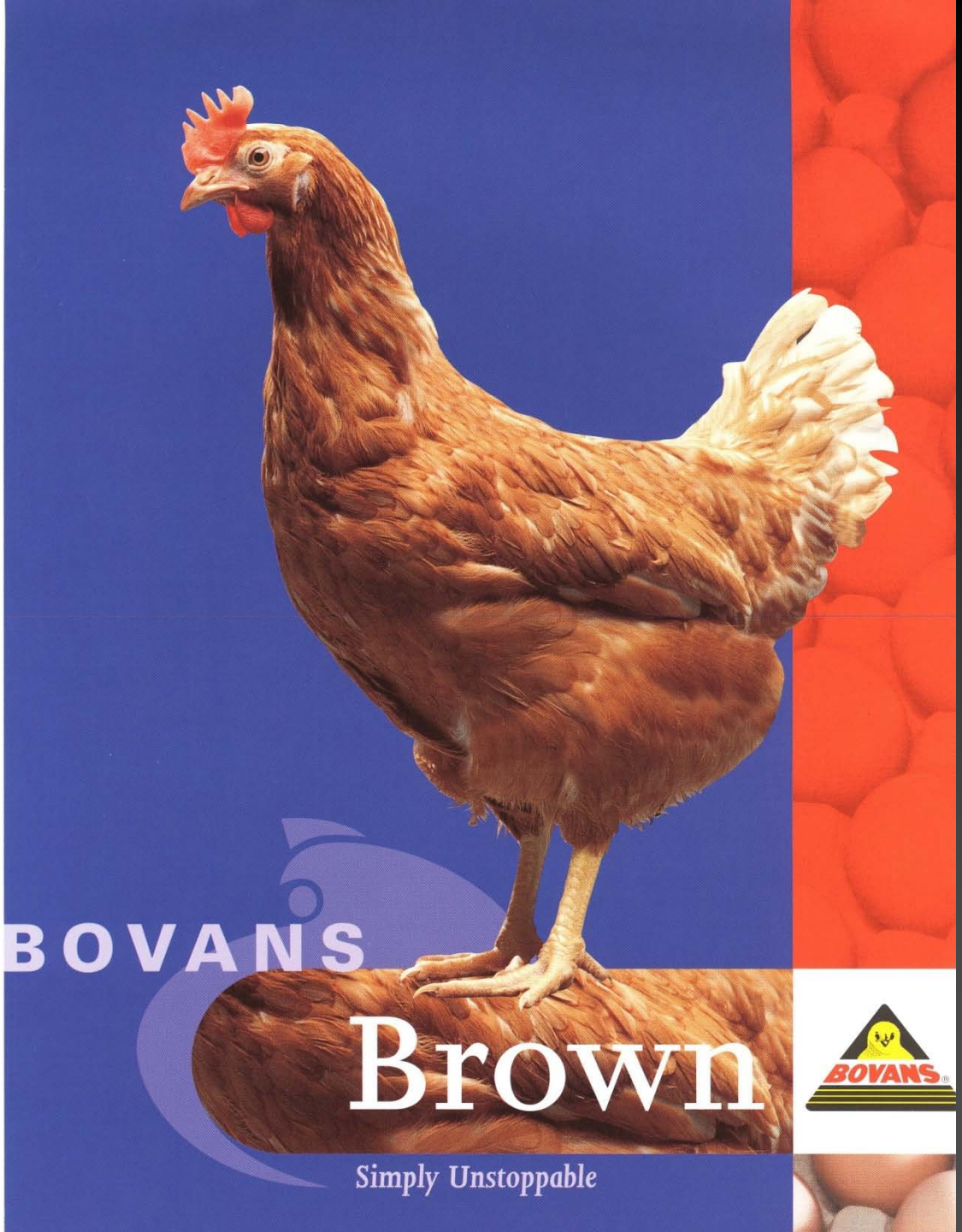
- Dekalb
- Bovan
- Shaver
- HiSex
- ISA

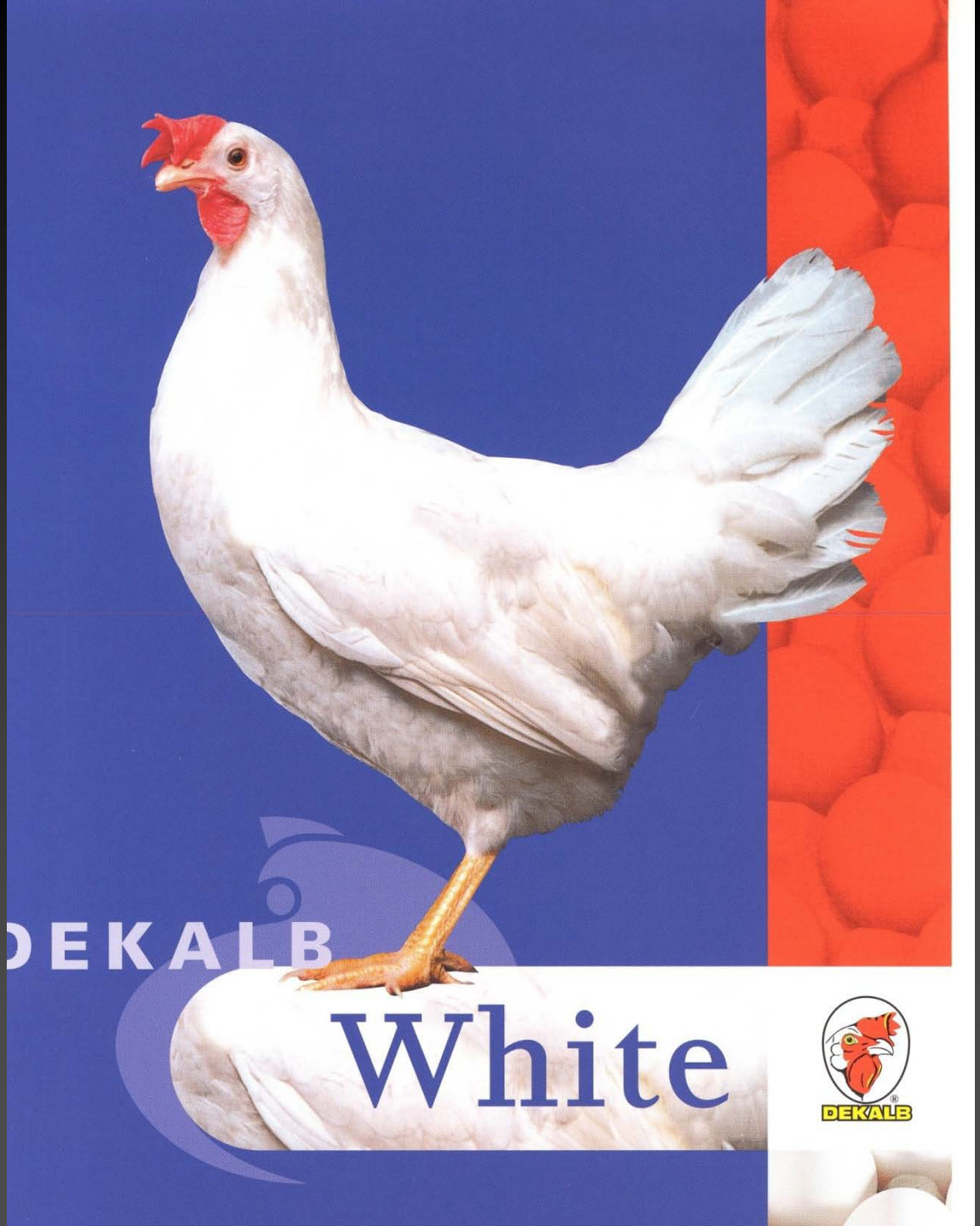
BOVANS

White

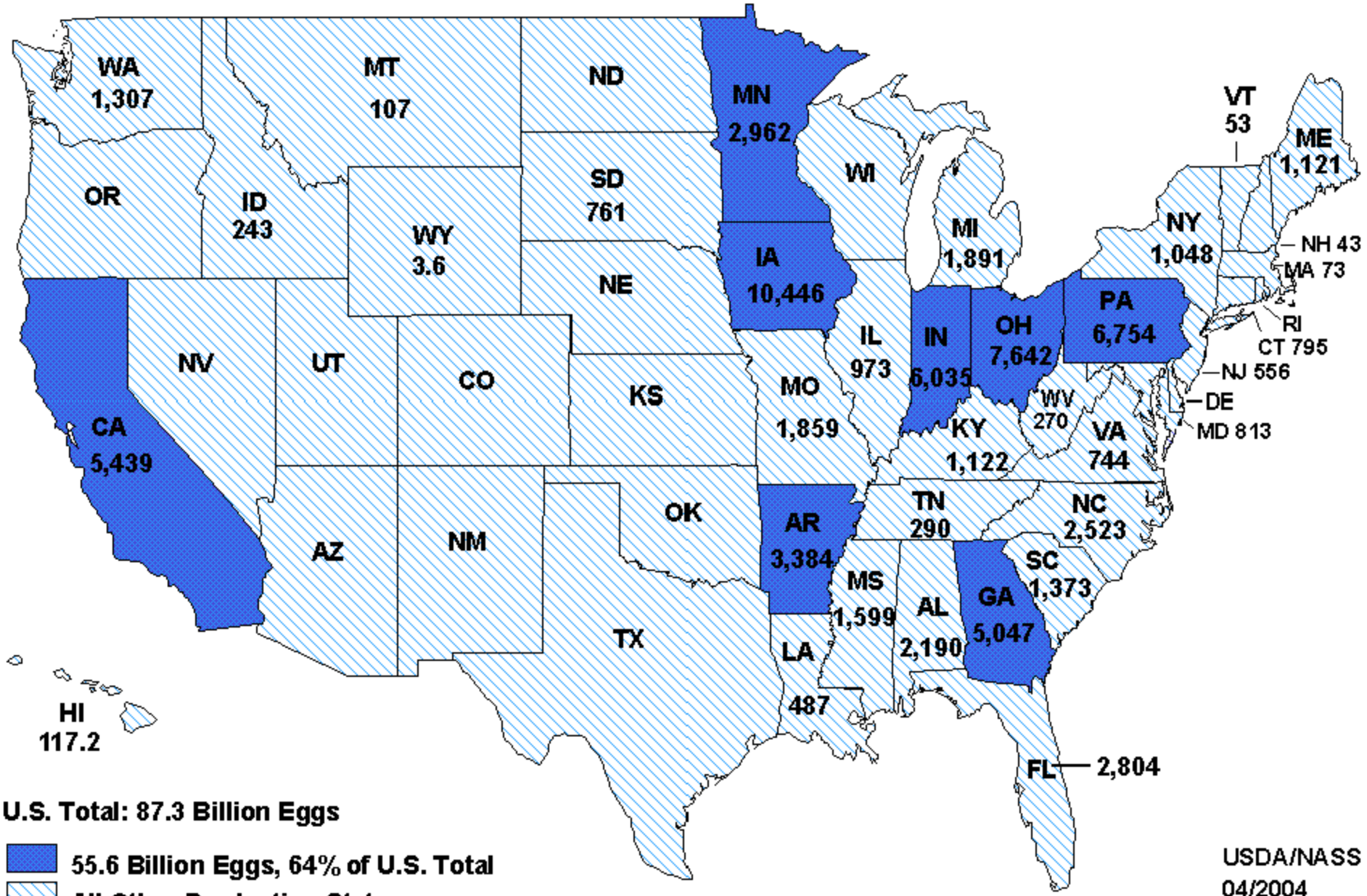
BOVANS®

The Bottom Line Bird


BOVANS
Brown
BOVANS
Simply Unstoppable


DEKALB
White
DEKALB

EGG PRODUCTION BY STATES
NUMBER PRODUCED, MILLION, 2003



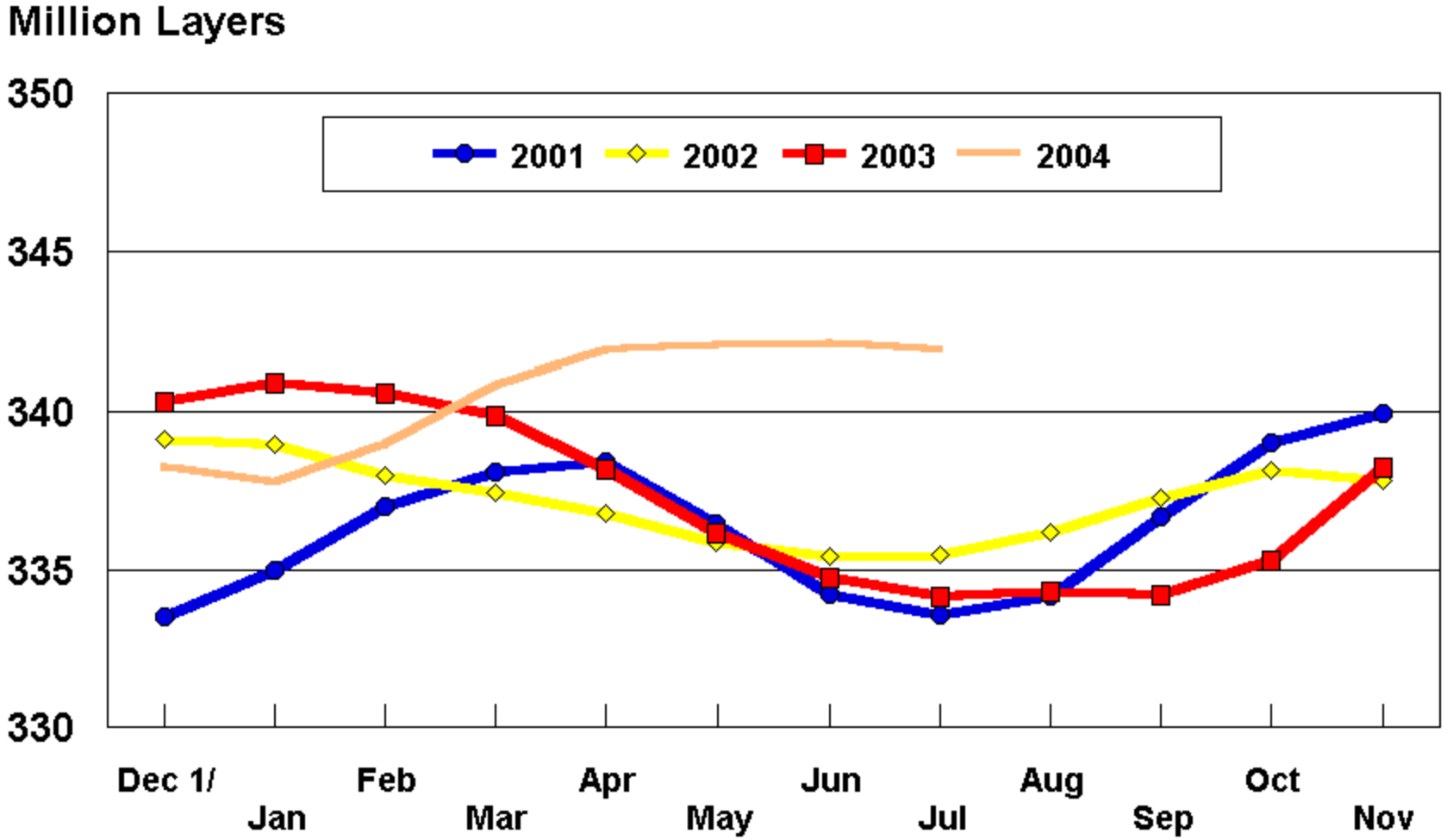
U.S. Total: 87.3 Billion Eggs

55.6 Billion Eggs, 64% of U.S. Total

All Other Production States

USDA/NASS
04/2004

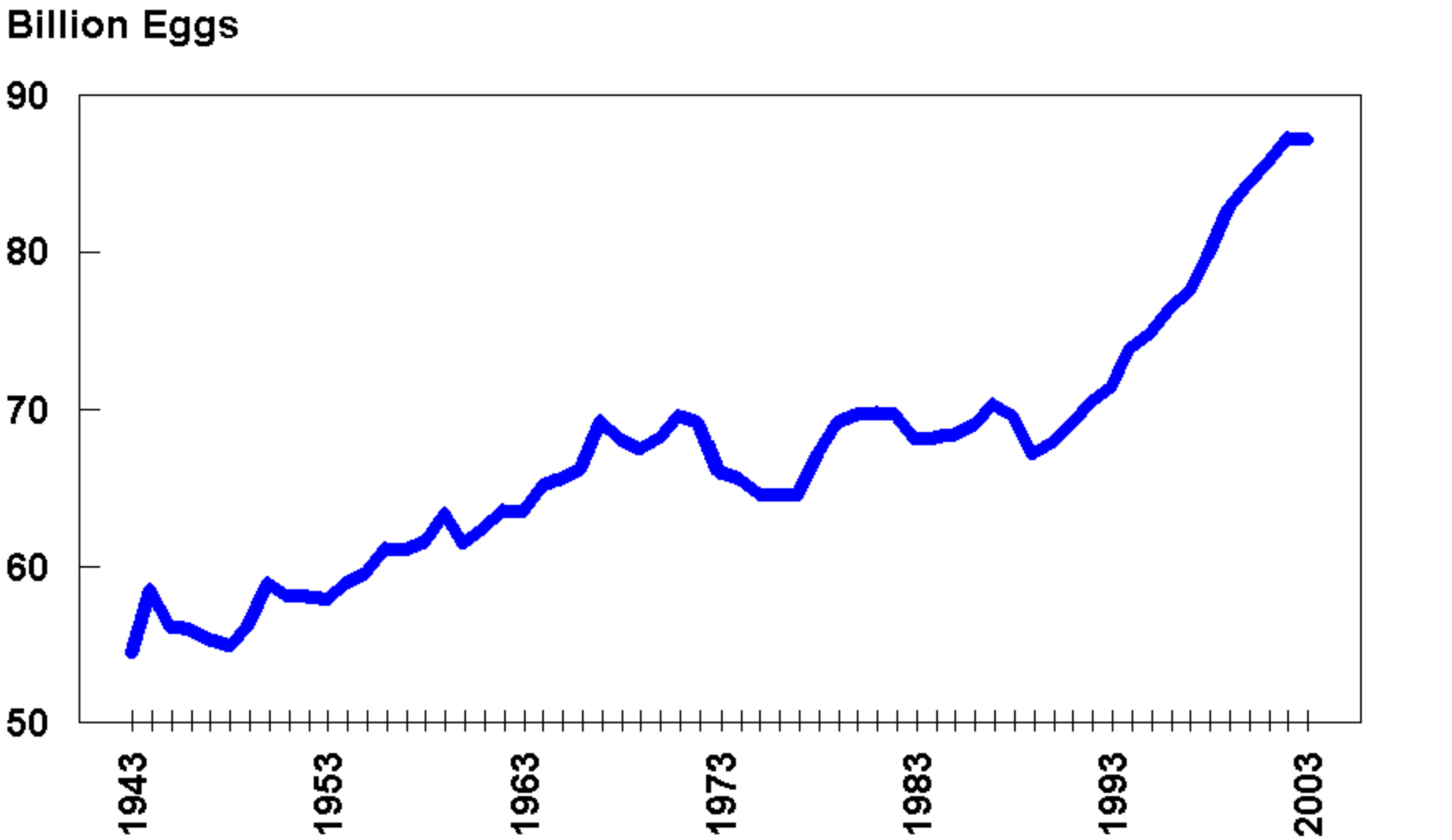
Average Number of All Layers
United States, 2001 - 2004



1/ Previous Year

USDA/NASS
08/23/04

U.S. Egg Production
1943-2003

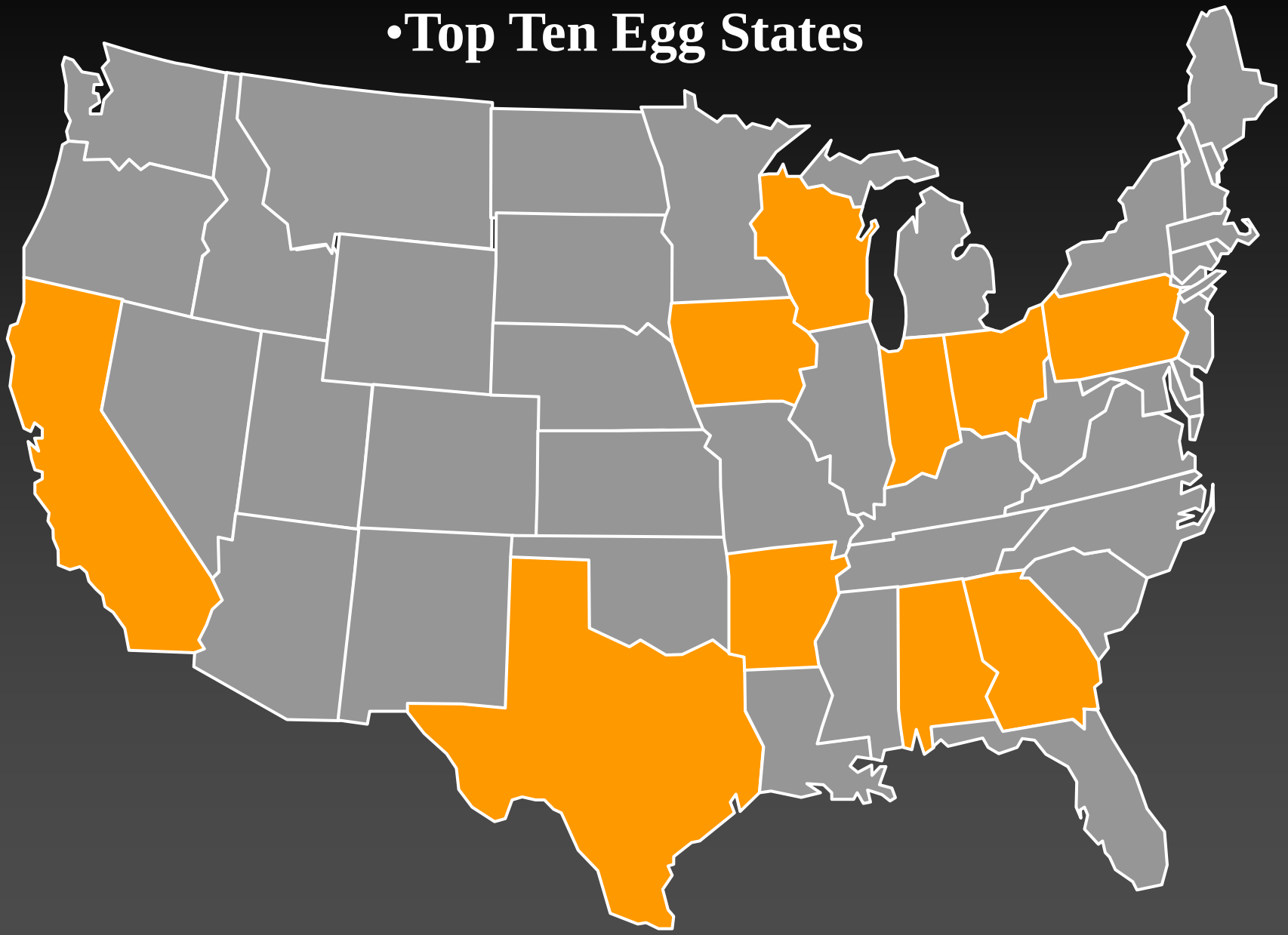


Top Five Egg Production States (2005)

	Million Eggs Produced
• Iowa	8,676
• Ohio	7,900
• Pennsylvania	6,662
• Indiana	6,025
• California	5,996

(Arkansas is number 8 with 3,427)

•Top Ten Egg States



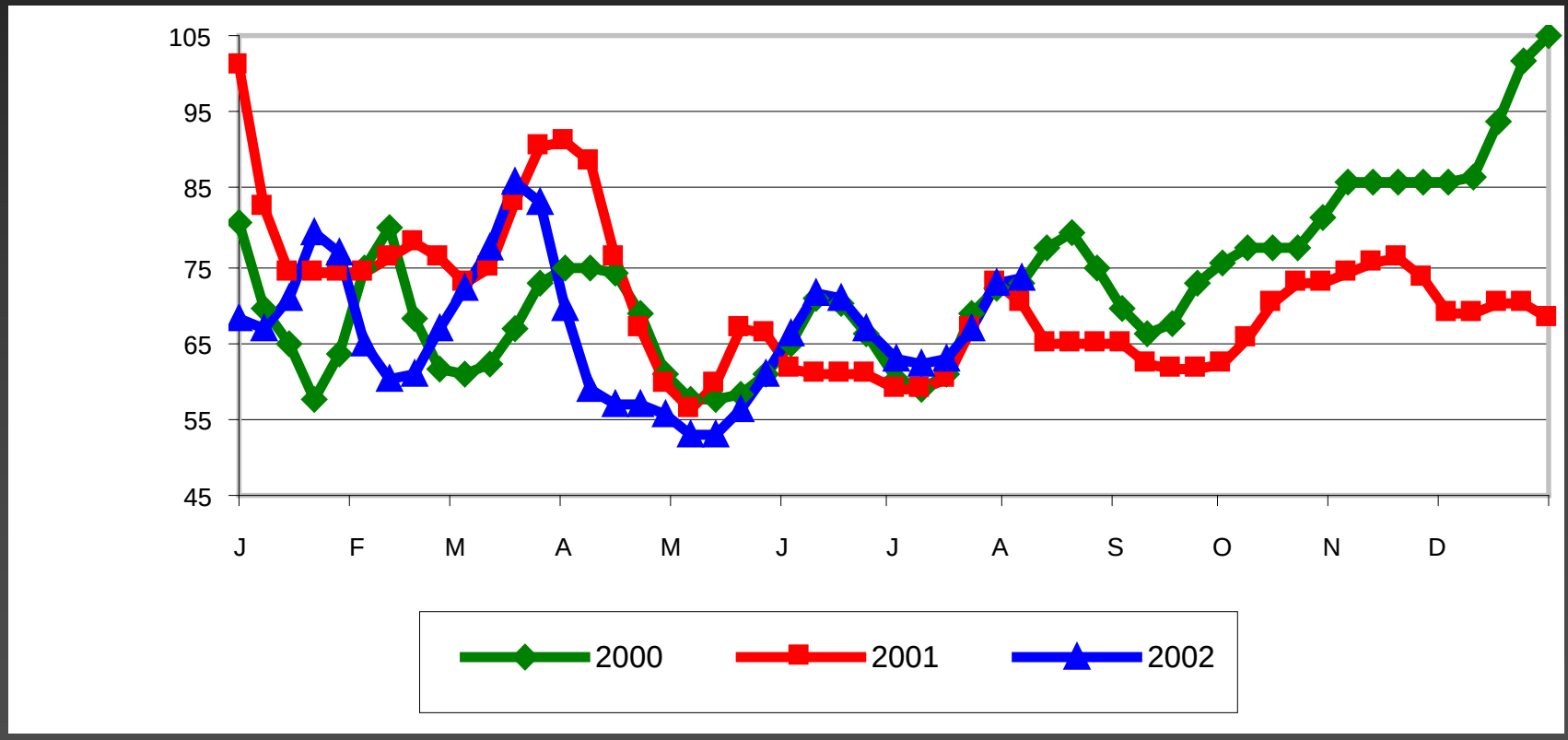
Nation's Top Egg Producers

(millions of layers in production December 31, 2005)

• Cal-Maine	23.836
• Rose Acre Farms, Inc.	17.500
• Moark LLC	14.200
• Michael Foods	14.000
• Sparboe Companies	12.500
• Wright County Egg Prod	9.00
• Ohio Fresh Eggs	8.00
• Golden Oval Eggs	7.400
• Ft. Recovery	6.964
• ISE American	6.931

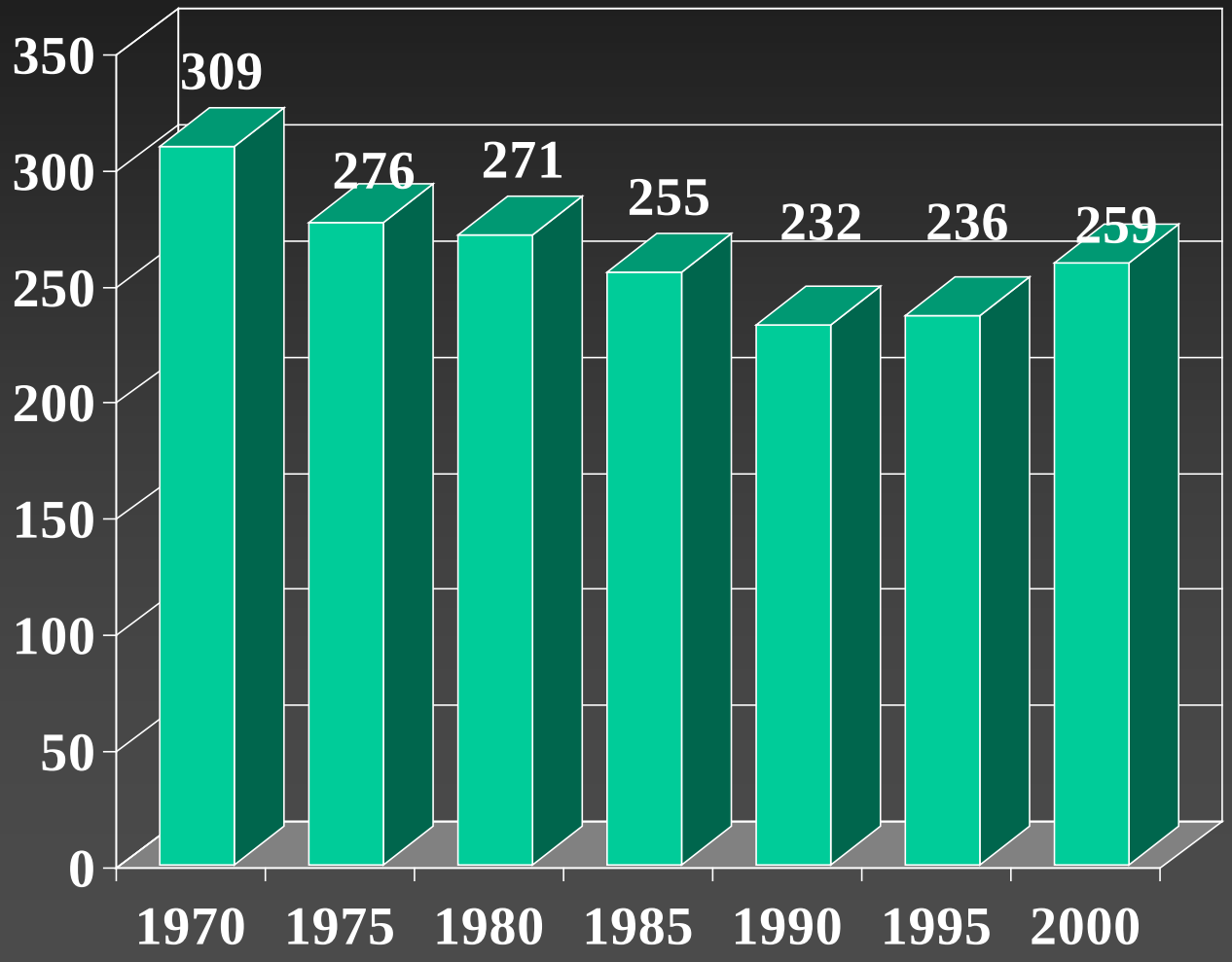
USDA United States Department of Agriculture

•12 Metro Area Average Price Cartoned Large White Eggs



•Source: USDA/AMS, Poultry Programs, Market News Branch

Per Capita Consumption



•Year

United Egg Producers

- Created in 1968 as a federated Capper-Volstead Agriculture Cooperative
- Represents 90 % of U. S. Egg Producers

Industry Issues

- Animal Welfare Hot Topic
  - Do conventional cages provide for humane care?
  - Cage space per bird and cage configuration
  - Beak Trimming
  - Molting
  - Handling, transportation and slaughter
- Air emissions
  - Two year on-farm monitoring study
  - Consent agreement releases participating producers from EPA liability

Commercial Egg-Summary

- Industry has high production facility costs and this has limited growth and expansion
- Industry is working to develop new products for niche markets
- Recent announcements by American Heart Asso. that”Egg a Day is O.K.” has helped image of industry
- New American Egg Board logo

  Eggs. Fast Food For Today


Thank You