

Cobb

500

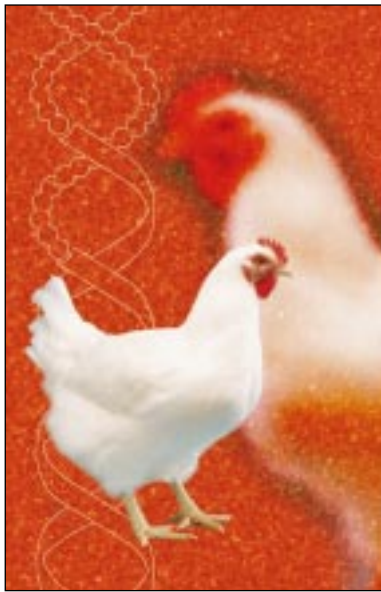
Product Profile



Cobb 500 Breeder

Balancing gains to benefit 'bottom line'

The Cobb 500 has a worldwide reputation for the lowest cost of producing chicken meat. Cobb geneticists have developed a breed which sets the standard in balanced performance...and, crucially, in 'bottom line' returns.



The product of today is the result of more than 30 years' progress, using a combination of both traditional pedigree selection and new technology.

Investment in research and development has continued to increase, with expenditure on state of the art facilities and global projects reaching almost \$200 million through the 1990s. This shows the value and

commitment which the parent company, Tyson Foods Inc, attaches to the Cobb breeding program.



Breeder Performance			
Age at depletion	(weeks)	60	65
	(days)	420	455
Age at 5% production	(weeks)	24	24
	(days)	168	168
Total eggs/hen housed		159	175
Hatching eggs/hen housed	(50g minimum)	154	170
Peak hatchability	(%)	91	91
Average hatchability	(%)	85	84
Broiler chicks/hen housed		132	144
Livability from day-old to depletion	(%)	88-90	88-90

Global Cobb 500 Performance (to 65 weeks)				
	Average	Top 25%	Top 10%	Target
Total Eggs	158.6	175.2	180.9	175.1
Hatching Eggs	153.8	168.7	173.4	169.1
Hatch %	83.8	86.7	87.6	84.5
Chicks	129.0	143.7	148.5	144.9
Mortality %	12.1	6.6	5.3	8.8

At breeder level, geneticists are selecting for characteristics which influence chick numbers including egg numbers, peak production, persistency, egg size, shell quality, fertility, hatchability and chick quality. The Cobb 500 pullet exhibits an excellent feed conversion ratio, while hen housed averages of more than 160 eggs per bird are being obtained by customers around the world, with this performance increasing on average by one egg per year.

Cobb 500 Broiler and Yield

Superior performance allows flexible growing regimes

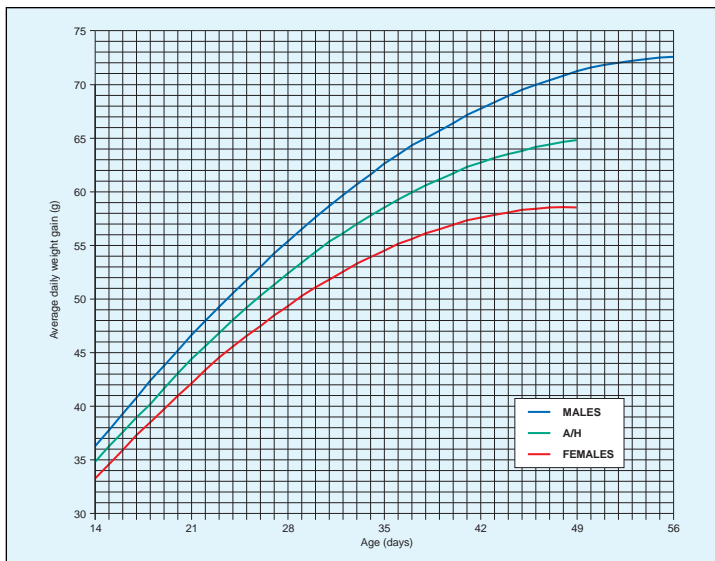
The Cobb 500 broiler is recognized for its superior performance in all major chicken markets around the world, where it is unrivalled for growth, feed efficiency and 'bottom line' profit.



The broiler thrives on welfare-friendly management, with natural length periods of night and day and with a diet lower in nutrient density. This enables customers to make considerable savings in feed costs - a primary factor in achieving cost-efficient production.

Feed conversion continues to fall by 0.1 every five years, with the target of reaching 1.5:1 by 2010. The breed's

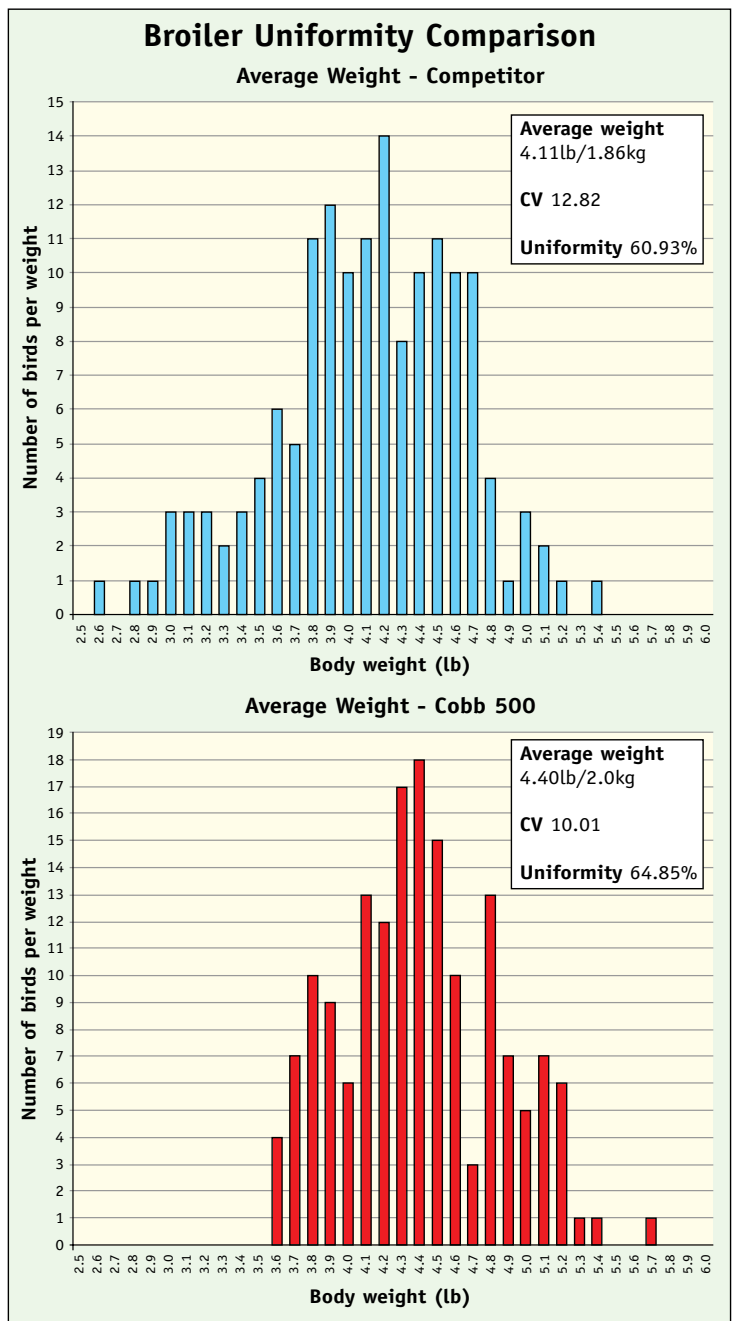
advantage over its competitors in broiler performance provides customers with the potential for flexible production programs to meet local market and legislative demands.



Cobb has long recognized the importance of selecting for good health. Twenty five years ago Cobb geneticists began pioneering use of ultra-sound technology to study bone and muscle development. The geneticists have been using oximeters to measure blood oxygen saturation since 1989 to assess the physiological health of individual birds and lines. Now genetic markers and DNA profiling are being used to verify the presence of individual genes.

Emphasis is placed on selecting birds from families that exhibit outstanding livability, with strong legs and skeletal frame, resistance to ascites, good overall immune response and with good feather cover.

The Cobb 500 broiler exhibits consistently better uniformity than its major competitor across a wide range of bodyweights, as a recent industry comparison of birds at the same age demonstrates (below). This advantage is seen both within each sex and across the sexes, resulting from the stability of the breeding program over many years.



Global Cobb 500 Broiler Performance

These figures highlight the ability of the Cobb 500 to perform in every part of the world.

The data are average numbers from many millions of broilers.

Although the broiler performance differs between countries, the Cobb 500 is typically at a lower bottom line cost than its competitors.

	Age	Weight (lb)	Weight (kg)	Growth Rate (g/day)	FCR
Argentina	49.5	5.46	2.48	49.48	2.04
Australia	40.5	4.63	2.10	51.70	1.81
Brazil	43.9	5.21	2.37	43.85	1.87
Colombia	40.8	4.52	2.05	50.27	1.85
Ecuador	53.2	5.48	2.49	54.85	2.02
Germany	33.5	3.75	1.70	50.75	1.55
Holland	40.3	5.09	2.31	57.38	1.74
Italy	45.3	5.40	2.45	54.14	1.87
Japan	50.7	6.44	2.92	57.59	2.00
Peru	48.0	5.62	2.55	53.02	1.94
South Africa	37.8	3.81	1.73	46.10	1.78
Turkey	48.7	4.97	2.26	46.28	1.98
UK	39.6	5.03	2.28	57.53	1.82
USA	45.8	4.90	2.22	48.44	1.90
Venezuela	42.8	4.52	2.05	47.90	1.91

Value of meat yield and uniformity to the processor

High meat yield, particularly from breast portions, is the goal of many customers. The Cobb 500 has been selected for meat yield and has an impressive record, with breast meat increased from 14% in 1987 to 20 - 21% today, and expected to exceed 25% by 2010.



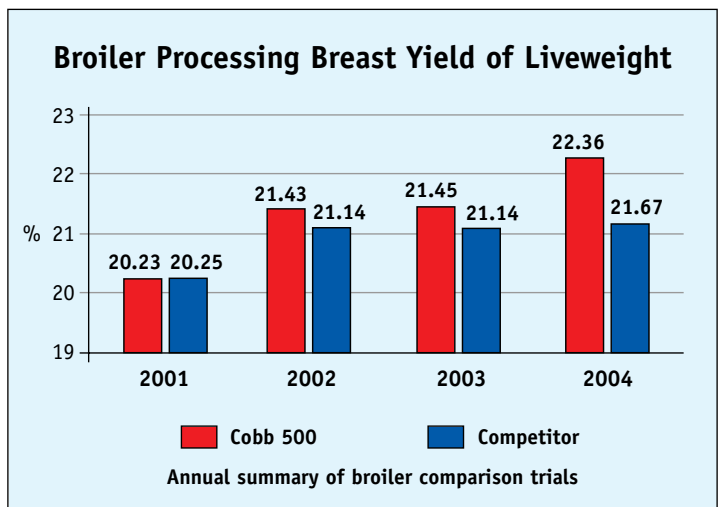
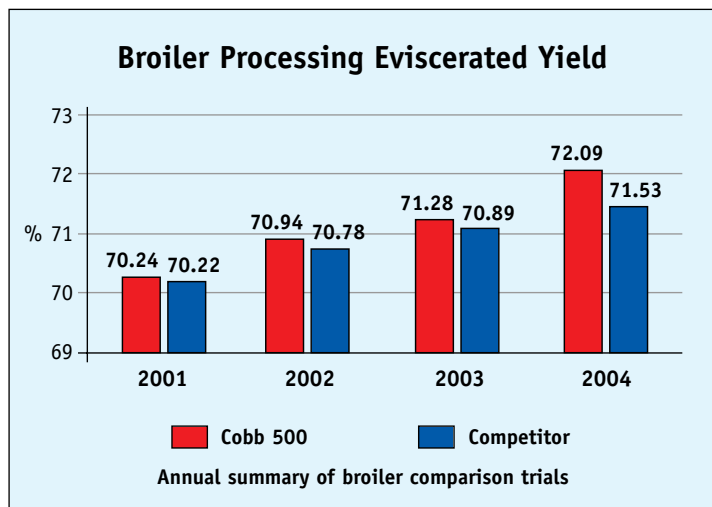
carcass shape. Meat quality is important too, with birds scored for 10 aspects including leanness, skin and meat color, and texture.

Increasing use of ultra-sound technology is replacing much of the need for bird dissection - this has helped to accelerate progress and to achieve the consistent conformation which processing plants expect in the Cobb 500.

On the processing line the Cobb 500 is renowned for its carcass uniformity as well as high breast meat yield - factors which lead to improved 'saleable yield.' Customers value this in reducing 'give away' to meet a retailer's tight specifications.

As the tables below indicate, the superior yield of the Cobb 500 against the competition is shown by the relative differences year-on-year for eviscerated and breast meat yield.

Our geneticists are not only selecting for yield and



Cobb 500 Bottom Line

Benefiting your profitability now...and into the future

Cobb geneticists have concentrated on improving Cobb 500 traits which have the greatest impact throughout integrated chicken production.

In today's increasingly global market, our industry is having to compete strongly on price and value-for-money. Margins, and ultimately costs, will continue to be under pressure. We believe we must keep our focus on the 'bottom line' impact of our breed - not just one segment of the production cycle. We're confident that this strategy best serves our customers today...just as it will in the years to come.

Cost of production is the issue that drives poultry businesses the world over. The example, below, shows the top 10 from 29 companies ranked by cost/liveweight (lb).

Companies Ranked by Cost/Liveweight						
Rank	Cost/lb (\$)	Weight (lb)	Weight (kg)	Age (days)	FCR	EEI
1	0.2515	6.05	2.742	49	1.75	310
2	0.2539	5.94	2.692	49	1.96	270
3	0.2551	6.15	2.788	50	1.90	282
4	0.2566	5.81	2.633	49	1.96	262
5	0.2589	6.26	2.838	52	1.99	262
6	0.2594	6.47	2.933	49	1.93	294
7	0.2622	6.05	2.742	53	2.00	247
8	0.2627	5.72	2.592	51	1.97	246
9	0.2640	5.77	2.615	50	1.98	251
10	0.2644	6.38	2.892	52	1.99	267

Companies Ranked by EEI						
Rank	Cost/lb (\$)	Weight (lb)	Weight (kg)	Age (days)	FCR	EEI
1	0.2515	6.05	2.742	49	1.75	310
6	0.2594	6.47	2.933	49	1.93	294
29	0.3554	5.68	2.574	44	1.93	288
18	0.2713	5.60	2.538	47	1.84	282
3	0.2551	6.15	2.788	50	1.90	282
23	0.2788	5.45	2.470	45	1.90	282
28	0.3002	5.31	2.406	44	1.91	274
2	0.2539	5.94	2.692	49	1.96	270
22	0.2765	5.29	2.397	46	1.86	269
21	0.2748	6.17	2.797	51	1.96	268

The European Efficiency Index (EEI) is used in some areas as a benchmark for broiler performance. It is a calculation that takes into account the key performance indicators. However, when competing in a global market, cost competitiveness is the most important factor.

In the table above, the same results are shown but this time ranked by EEI. The company with the worst cost/liveweight actually had the third highest EEI.

In the integrated chicken business no single discipline dictates the profitability of an organization.

Factors influencing the overall 'bottom line' cost start at the breeder rearing house and finish after the product leaves the processing plant.

Principles of an economic model

The best method to determine the effects of each discipline on overall profitability of a business is to employ a simple economic model.

This is designed to make cost calculations based on the production variables as they are changed. One advantage of using an economic model is that it highlights the relative effect of different performance traits and cost factors. It is then easy to identify factors that have a major influence on 'bottom line' profitability - such as feed conversion, feed price or breast meat yield. Other factors such as reproductive performance can then be put in perspective, as they have a lesser effect.



Cobb 500 Bottom Line

Number of broilers processed per week	1,000,000	1,000,000
	Cobb 500	Competitor
Breeder		
Chicks per breeder to 65 weeks of age	130.0	140.0
Broiler growing		
Broiler Weight lb (kg)	6.44 (2.920)	6.44 (2.920)
Average feed price per US ton	\$190.00	\$190.00
Feed conversion	1.977	2.037
Cost per lb liveweight	\$0.21	\$0.22
Cost per kg liveweight	\$0.47	\$0.49
Processing		
Eviscerated carcass yield	72.09	71.53
Breast meat yield (% liveweight)	22.36	21.67
To process 1,000,000 Broilers per week		
Annual Breeder production costs	\$11,023,659	\$10,443,609
Broiler growing costs	\$72,112,197	\$73,859,127
Processing plant costs	\$43,680,000	\$43,680,000
Total income	\$164,949,805	\$161,667,085
Annual profit	\$38,133,949	\$33,684,348

- The table above is based on industry data and is an illustrative example.
- The currency in the above table is in US Dollars.

By using Cobb's economic model, this example shows the dynamics of breeder and broiler performance as well as the importance of meat yield.

As the model indicates, the Cobb 500's outstanding performance provides the greatest return to an integrator requiring exceptional FCR and meat yield.

Helping customers take full advantage of the Cobb 500

Cobb's philosophy is not only to provide top quality broiler breeding stock, but to enable customers to maximize their investment by managing their poultry assets.

The Cobb World Technical Support Team was developed in 1998, bringing together leading experts in each aspect of chicken production. The team now covers animal health, nutrition, environment, breeder, broiler and hatchery production, processing and data analysis. Working alongside Cobb's regional technical service teams, they provide support and assistance for Cobb customers worldwide.



The data in this publication are based on actual field performance and trial information.



Cobb-Vantress, Inc

Tel: +1 479 524 3166

Email: info@cobb-vantress.com

PO Box 1030, Siloam Springs, Arkansas 72761

Cobb Europe

Tel: +31 341 36 08 80

Email: info@cobb-europe.com

Midden Engweg 13, 3882 TS Putten, The Netherlands

Cobb-Vantress Brasil, Ltda

Tel: +55 17 3216 9700

Email: cobb.info@cobb-vantress.com.br

Rodovia Assis Chateaubriand, Km 10, Cep: 15110-000/Caixa Postal 2, Guapiacu-SP-Brasil

www.cobb-vantress.com