



Management Supplement

# Cobb500 Fast Feather Breeder

Management Supplement



[www.cobb-vantress.com](http://www.cobb-vantress.com)

## Use this Cobb Breeder Management Supplement along with the Cobb Breeder Management Guide as aids to build your management program.

Management must meet the basic needs of the stock but also be optimized to attain the full potential of the breed. Our recommendations in this supplement are based on current scientific knowledge and practical experience and reflect the genetic potential of the Cobb hens based on Total Eggs and Hatch Percent records taken from the top 25% of Cobb flocks worldwide.

This supplement should be used as a guide only and adapted locally according to your own experience when projecting performance from all flocks in a particular operation. You should be aware of any local legislation which may influence the management practices that you choose to adopt.

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Today's modern breeder chickens are more efficient, more productive, and more robust than prior generations. This progress is due to improved genetics and advances in husbandry methods that enhance the longevity, welfare outcomes and performance of breeder chickens at rearing and laying farms.

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Cobb continues to expand the variety of breed crosses to meet global customer needs and expectations. Cobb technical representatives are always available for any questions and assistance.

For more information visit  
Cobb Breeder Management  
Guide at:  
<https://www.cobb-vantress.com/resource/management-guides>

## Management Highlights

- ✓ Ideal brooding conditions (feed, light, ventilation, bedding and water management) must always be implemented and closely monitored to ensure physiological requirements are met for optimum bird comfort.
- ✓ Research and field results have shown that Cobb's current feed specifications have a positive impact on flock uniformity, fleshing, feathering, and breeder performance.
- ✓ Adequate feeder space and flock uniformity are essential to achieve optimum performance.
- ✓ Observe the flock during feeding as often as possible – weekly at a minimum. This will help ensure feed distribution of <3 minutes with chain and pan feeders in the dark and proper feed space requirements.
- ✓ Monitor daily water intake and provide adequate drinkers (maximum 10 birds / nipple or 75 birds / bell drinker).
- ✓ Biosecurity should always be top priority. Flock health is essential to achieve breed potential.



# Standard Fleshing and Pelvic Fat

Week	Fleshing Score			Total #3 + #4	Pelvic Fat
	#2	#3	#4		
12	70%	30%		30%	
16	40%	60%		60%	
19	<10%	60%	30%	90%	>65%
20	<5%	60%	35%	95%	>75%
21		60%	40%	100%	>85%
22		60%	40%	100%	>90%

- ✓ Light stimulation should be at 147 days (or 21 weeks) of age. If fleshing is considerably behind at 16 and 20 weeks, the target mixing (and lighting) should be delayed until 150 to 154 days. Bodyweight (BW) should increase 36% between 16 to 20 weeks to facilitate fleshing and pelvic fat deposition. Feed increases between 14 to 20 weeks should be accelerated to achieve the target weight, fleshing and fat deposition at lighting.
- ✓ The fleshing and fat scores at 19 and 20 weeks of age determine the correct age for lighting. All rearing data including the BW curve, feeding curve, feed formulation, fleshing and pelvic fat scoring should be used to make this decision.
- ✓ It is essential for males and females to have sexual synchronization at mixing. If male maturity is ahead of the female, males can be moved or mixed 1 week later. Temporarily mixing less males (5 to 7%) is another option. Please refer to the Cobb male supplement for more information.

## The Essentials

- ✓ **Uniformity** - Starts at placement. Achieve early BW and uniformity target at 1, 4, 8, and 12 weeks of age.
- ✓ **Feed guide** - Establish a feeding curve to achieve +/-2% of the BW standard during rearing. The feeding curve should be supported by the feed specifications and local conditions.
- ✓ **Female condition** - To accomplish proper flock condition, it is important to achieve BW and fleshing targets at 12, 16, and 20 weeks of age.
- ✓ **BW (1 to 16 weeks)** - Prevent over weight issues in the first 16 weeks of the rearing period. Achieve +/- 2% of the standard BW.
- ✓ **BW increase (16 to 20 weeks)** - A BW increase of 36% should occur and this is normally obtained by increasing the feed by 40 to 42% in this same period.
- ✓ **Light Stimulation** - Flock performance is directly correlated to flock condition at light stimulation. The goal is for 100% of the females to have a fleshing score between #3 to #4 and >85% of the females with pelvic fat.

Breeder Performance (Top 25% Flocks)			
Age at 3% Production	(Weeks)	24	
	(Days)	168	
Peak Production	(%)	86	
Peak Hatchability	(%)	90	
Age at Depletion	(Weeks)	60	65
	(Days)	420	455
Total Eggs / Hen Housed		166.4	181.3
Hatching Eggs / Hen Housed	(50g minimum)	160.3	174.8
Cumulative Hatchability	(%)	86.2	85.6
Broiler Chicks / Hen Housed		138.2	149.6
Livability from 25 Weeks	(%)	92.8	92.3

## Formulas Applied in Breeder Performance, Hatchability and Fertility Calculation

- ✓ Total Eggs (%HW) = Total Eggs Produced / Average Number of Hens for the week
- ✓ HH (Hen Housed) = Number of Hens at Capitalization (normally 25 weeks)
- ✓ Hatching Eggs (%HW) = Total Eggs (%HW) \* % HE Weekly
- ✓ Weekly Total Eggs/HH = (1 - Cum. Mortality%) \* Total Eggs (HW%) \* 7
- ✓ Weekly Hatching Eggs/HH = (1 - Cum. Mortality%) \* Hatching Eggs (HW%) \* 7
- ✓ Cum. Total Eggs/HH = Cum. Total Eggs Produced / Hen Housed
- ✓ Cum. Hatching Eggs/HH = Cum. Hatching Eggs Produced / Hen Housed
- ✓ Weekly Chicks/HH = Weekly Hatching Eggs/HH \* Weekly Hatchability (%)
- ✓ Cum. Chicks/HH = Cum. Chicks produced / Hen Housed
- ✓ Cum. Hatchability = (Cum. Chicks/HH) / (Cum. Hatching Eggs/HH)
- ✓ Weekly Fertile Eggs/HH = Weekly Hatching Eggs/HH \* Weekly Fertility (%)
- ✓ Cum. Fertility = (Cum. Fertile Eggs/HH) / (Cum. Hatching Eggs/HH)

**Feed Intake, Nutrient Intake, and BW Guide for Cobb 500 Fast Feather Female (Dark Out)**

Week	BW* (/bird)		Nutrient Intake** (/bird/day)			Feed Type	Feed Intake***		
	g	lb	Energy Kcal	Protein g	Dig. Lysine mg		g/bird/day	Increase	lb/100birds/day
1	145	0.32	63	4.2	206	ST	22		4.9
2	280	0.62	79	5.3	258	ST	28	6	6.1
3	405	0.89	94	6.3	307	ST	33	5	7.3
4	520	1.15	108	7.2	352	ST	38	5	8.4
5	630	1.39	114	6.1	253	GR	42	4	9.3
6	740	1.63	123	6.6	273	GR	46	4	10.0
7	840	1.85	128	6.9	284	GR	47	1	10.5
8	940	2.07	131	7.0	291	GR	49	2	10.7
9	1030	2.27	134	7.2	298	GR	50	1	10.9
10	1120	2.47	137	7.4	304	GR	51	1	11.2
11	1210	2.67	142	7.6	316	GR	53	2	11.6
12	1300	2.87	147	7.9	327	GR	54	1	12.0
13	1390	3.06	154	8.3	342	GR	57	3	12.6
14	1490	3.28	164	8.8	364	GR	61	4	13.4
15	1590	3.51	178	9.6	396	GR	66	5	14.5
16	1690	3.73	202	10.8	455	DL	72	6	15.9
17	1830	4.03	222	11.9	500	DL	79	7	17.5
18	1980	4.37	244	13.1	549	DL	87	8	19.2
19	2140	4.72	266	14.3	599	DL	95	8	20.9
20	2300	5.07	284	15.2	639	DL	101	6	22.4
21	2450	5.40	298	16.0	671	DL	106	5	23.5
22	2600	5.73	308	16.5	693	DL	110	4	24.3
23	2850	6.28	318	17.0	716	DL	114	4	25.0
24	3000	6.61	328	17.6	738	B1	117	3	25.8

\* Weights correspond to the weekly age based on the placement or hatch date. Between 2 to 22 weeks, weights should be taken when the crop is empty (dry BW) or at least 6 to 7 hours after the last feeding. Another option is to weigh the birds after the lights come on and before feeding takes place. Please consult with your Cobb technical representative for feed and light programs.

\*\* Nutrient requirements are determined by growth models combined with field data from the best performing Cobb flocks worldwide.

\*\*\* Feed intake is developed based on Cobb feed specifications (see page 15-16) recommended for Cobb 500 females in their comfort zone (18-28°C, or 64-82°F).

Feed intake is for guide purposes only and needs to be adjusted based on actual nutritional specifications to achieve the target BW and optimum conditions for the birds. Feed type: ST = starter, GR = grower, DL = developer, B1 = breeder 1

When daily feeding is done in rearing, the weekly feed amount can be increased by 2 to 3g from 5 to 14 weeks by using a lower density grower diet while maintaining the same nutrient intake/bird/day. This will help reduce stress and achieve more feed availability for proper feed distribution.

Please refer to Cobb Breeder Management Guide for general flock recommendations and uniformity management. >75% flock uniformity (<9% CV) is preferred consistently during the rearing period to achieve proper condition prior to light stimulation.

### Feed Increase Plan for Pullets

Week	Days of Age	Feed Increase Range (g/bird/day)
14	92 - 98	<b>3 - 5</b>
15	99 - 105	<b>5 - 10</b>
16	106 - 112	<b>6 - 10</b>
17	113 - 119	<b>6 - 10</b>
18	120 - 126	<b>5 - 8</b>
19	127 - 133	<b>5 - 8</b>
20	134 - 140	<b>4 - 7</b>
21	141 - 147	<b>3 - 5</b>
22	148 - 154	<b>3 - 4</b>
23	155 - 161	<b>3 - 4</b>
24	162 - 168	<b>3 - 4</b>
25	169 - 175	<b>Based on production</b>

- ✓ The feed amount in this table is based on Cobb nutritional recommendations and is for guide purposes only. Lower density feed requires higher feed increases.
- ✓ This feed increase plan applies to scenarios when birds are on target BW or slightly below target at 16 weeks of age.
- ✓ Extra feed increases should be considered during transfer or vaccination when birds are experiencing stress.
- ✓ Flocks with poor uniformity (<70%) could require higher feed increases.

**Feed Intake, Nutrient Intake, and BW Guide for Cobb 500 Fast Feather Female (Open Sided)**

Week	BW* (/bird)		Nutrient Intake** (/bird/day)			Feed Type	Feed Intake***		
	g	lb	Energy Kcal	Protein g	Dig. Lysine mg		g/bird/day	Increase	lb/100birds/day
1	145	0.32	66	4.4	214	ST	23		5.1
2	285	0.63	83	5.5	270	ST	29	6	6.4
3	425	0.94	100	6.7	326	ST	35	6	7.7
4	550	1.21	114	7.6	372	ST	40	5	8.8
5	660	1.46	120	6.4	267	GR	44	4	9.8
6	770	1.70	129	6.9	287	GR	48	4	10.5
7	875	1.93	134	7.2	298	GR	50	2	10.9
8	975	2.15	139	7.5	309	GR	51	1	11.3
9	1070	2.36	142	7.6	316	GR	52	1	11.5
10	1160	2.56	144	7.7	320	GR	53	1	11.8
11	1250	2.76	149	8.0	331	GR	55	2	12.2
12	1340	2.95	154	8.3	342	GR	57	2	12.6
13	1430	3.15	159	8.5	353	GR	59	2	13.0
14	1520	3.35	169	9.1	376	GR	63	4	13.8
15	1630	3.59	183	9.8	407	GR	68	5	14.9
16	1750	3.86	207	11.1	466	DL	74	6	16.3
17	1900	4.19	227	12.2	511	DL	81	7	17.9
18	2050	4.52	249	13.3	560	DL	89	8	19.6
19	2220	4.89	271	14.5	610	DL	97	8	21.3
20	2380	5.25	289	15.5	650	DL	103	6	22.8
21	2540	5.60	303	16.2	682	DL	108	5	23.9
22	2700	5.95	313	16.8	704	DL	112	4	24.6
23	2960	6.53	323	17.3	727	DL	115	3	25.4
24	3120	6.88	333	17.8	749	B1	119	4	26.2

\* Weights correspond to the weekly age based on the placement or hatch date. Between 2 to 22 weeks, weights should be taken when the crop is empty (dry BW) or at least 6 to 7 hours after the last feeding. Another option is to weigh the birds after the lights come on and before feeding takes place. Please consult with your Cobb technical representative for feed and light programs.

\*\* Nutrient requirements are determined by growth models combined with field data from the best performing Cobb flocks worldwide.

\*\*\* Feed intake is developed based on Cobb feed specifications (see page 15-16) recommended for Cobb 500 females in their comfort zone (18-28°C, or 64-82°F).

Feed intake is for guide purposes only and needs to be adjusted based on actual nutritional specifications to achieve the target BW and optimum conditions for the birds. Feed type: ST = starter, GR = grower, DL = developer, B1 = breeder 1

When daily feeding is done in rearing, the weekly feed amount can be increased by 2 to 3g from 5 to 14 weeks by using a lower density grower diet while maintaining the same nutrient intake/bird/day. This will help reduce stress and achieve more feed availability for proper feed distribution.

Please refer to Cobb Breeder Management Guide for general flock recommendations and uniformity management. >75% flock uniformity (<9% CV) is preferred consistently during the rearing period to achieve proper condition prior to light stimulation. Although BW and feed intake for open sided rearing is provided, dark out rearing system is recommended.

### Feed Increase Plan for Pullets

Week	Days of Age	Feed Increase Range (g/bird/day)
14	92 - 98	3 - 5
15	99 - 105	5 - 10
16	106 - 112	6 - 10
17	113 - 119	6 - 10
18	120 - 126	5 - 8
19	127 - 133	5 - 8
20	134 - 140	4 - 7
21	141 - 147	3 - 5
22	148 - 154	3 - 4
23	155 - 161	3 - 4
24	162 - 168	3 - 4
25	169 - 175	Based on production

- ✓ The feed amount in this table is based on Cobb nutritional recommendations and is for guide purposes only. Lower density feed requires higher feed increases.
- ✓ This feed increase plan applies to scenarios when birds are on target BW or slightly below target at 16 weeks of age.
- ✓ Extra feed increases should be considered during transfer or vaccination when birds are experiencing stress.
- ✓ Flocks with poor uniformity (<70%) could require higher feed increases.

**Feed Intake, Nutrient Intake, and BW Guide for Cobb 500 Fast Feather Female (Production)**

Week	BW (/bird)				Nutrient Intake (/bird/day)			Feed Intake	
	Dark Out g	Open Sided lb	Open Sided g	Open Sided lb	Energy Kcal	Protein g	Dig.Lysine mg	g/bird/ day	lb/100birds/ day
25	3130	6.90	3240	7.14					
26	3260	7.19	3340	7.36					
27	3360	7.41	3440	7.58					
28	3460	7.63	3530	7.78	460	24.7	1036	164	36.2
29	3540	7.80	3600	7.94	460	24.7	1036	164	36.2
30	3600	7.94	3660	8.07	460	24.7	1036	164	36.2
31	3645	8.04	3700	8.16	458	24.5	1029	163	36.0
32	3680	8.11	3735	8.23	458	24.5	1029	163	36.0
33	3715	8.19	3770	8.31	455	24.4	1023	162	35.8
34	3750	8.27	3800	8.38	455	24.4	1023	162	35.8
35	3780	8.33	3830	8.44	452	24.2	1017	161	35.6
36	3810	8.40	3855	8.50	452	24.2	1017	161	35.6
37	3835	8.45	3880	8.55	449	24.1	1011	160	35.4
38	3860	8.51	3900	8.60	449	24.1	1011	160	35.4
39	3880	8.55	3920	8.64	446	23.1	956	159	35.1
40	3900	8.60	3940	8.69	446	23.1	956	159	35.1
41	3920	8.64	3960	8.73	444	23.0	950	158	34.9
42	3940	8.69	3980	8.77	444	23.0	950	158	34.9
43	3960	8.73	4000	8.82	444	23.0	950	158	34.9
44	3980	8.77	4020	8.86	441	22.8	944	157	34.7
45	4000	8.82	4040	8.91	441	22.8	944	157	34.7
46	4020	8.86	4060	8.95	441	22.8	944	157	34.7
47	4040	8.91	4080	8.99	438	22.7	938	156	34.5
48	4060	8.95	4100	9.04	438	22.7	938	156	34.5
49	4080	8.99	4120	9.08	438	22.7	938	156	34.5
50	4095	9.03	4140	9.13	435	22.5	932	155	34.3
51	4110	9.06	4160	9.17	435	22.5	932	155	34.3
52	4125	9.09	4175	9.20	435	22.5	932	155	34.3
53	4140	9.13	4190	9.24	435	22.5	932	155	34.3
54	4150	9.15	4200	9.26	432	22.4	926	154	34.0
55	4160	9.17	4210	9.28	432	22.4	926	154	34.0
56	4170	9.19	4220	9.30	432	22.4	926	154	34.0
57	4180	9.22	4230	9.33	432	22.4	926	154	34.0
58	4190	9.24	4240	9.35	430	22.2	920	153	33.8
59	4200	9.26	4250	9.37	430	22.2	920	153	33.8
60	4210	9.28	4260	9.39	430	22.2	920	153	33.8
61	4220	9.30	4270	9.41	430	22.2	920	153	33.8
62	4230	9.33	4280	9.44	427	22.1	914	152	33.6
63	4240	9.35	4290	9.46	427	22.1	914	152	33.6
64	4250	9.37	4300	9.48	427	22.1	914	152	33.6
65	4260	9.39	4310	9.50	427	22.1	914	152	33.6

See Table for Feeding into Lay

## Female Feeding into Lay

% Hen Day	Energy Intake		Feed Intake	
	kcal/bird/day	Range	g/bird/day	Increase
5%	330	320-340	118	
15%	339	330-350	121	3
25%	347	335-360	124	3
35%	364	350-375	130	6
45%	386	375-400	138	8
55%	412	400-425	147	9
65%	437	425-450	156	9
75%	460	440-470	164	8

- ✓ This feed amount is based on crumble feed. Mash feed may require higher calorie intake and adjustments have to be made accordingly.
- ✓ The feed amount is based on thermoneutral conditions (21°C, or 70°F, from 3 weeks of age). Consult with your local technical service representative when feeding in extreme climate conditions.
- ✓ When production reaches more than 86%, the peak feed plan can be increased or extended 1 to 2 weeks.
- ✓ Please refer to the Cobb Breeder Management Guide or contact your Cobb technical representative concerning post peak feeding.

## BREEDER PERFORMANCE

Breeder Performance						
Week	Total Eggs (%HW)	Hatching Eggs (%HW)	Mortality Cum. (%)	% HE Weekly	Total Eggs / HH	Hatching Eggs / HH
24	3.0	1.5	0.25	50.0	0.2	0.1
25	20.0	15.0	0.50	75.0	1.6	1.1
26	50.0	40.0	0.80	80.0	5.1	3.9
27	73.0	67.2	1.30	92.0	10.1	8.6
28	82.0	77.9	1.70	95.0	15.8	13.9
29	85.0	81.6	2.05	96.0	21.6	19.5
30	86.0	83.0	2.35	96.5	27.5	25.2
31	85.8	83.7	2.60	97.5	33.3	30.9
32	84.8	82.7	2.80	97.5	39.1	36.5
33	83.8	81.7	3.00	97.5	44.8	42.1
34	82.8	81.0	3.20	97.8	50.4	47.6
35	81.8	80.0	3.40	97.8	55.9	53.0
36	80.8	79.0	3.60	97.8	61.4	58.3
37	79.8	78.0	3.80	97.8	66.7	63.6
38	78.8	77.1	4.00	97.8	72.0	68.7
39	77.8	76.1	4.20	97.8	77.3	73.8
40	76.7	74.4	4.40	97.0	82.4	78.8
41	75.6	73.3	4.65	97.0	87.4	83.7
42	74.5	72.3	4.90	97.0	92.4	88.5
43	73.3	71.1	5.15	97.0	97.3	93.2
44	72.1	69.9	5.35	97.0	102.0	97.9
45	70.9	68.8	5.50	97.0	106.7	102.4
46	69.7	67.6	5.65	97.0	111.3	106.9
47	68.5	66.4	5.80	97.0	115.8	111.3
48	67.3	65.3	5.95	97.0	120.3	115.6
49	66.1	64.1	6.10	97.0	124.6	119.8
50	64.9	63.0	6.25	97.0	128.9	123.9
51	63.6	61.7	6.35	97.0	133.1	128.0
52	62.3	60.4	6.45	97.0	137.1	131.9
53	61.0	59.2	6.55	97.0	141.1	135.8
54	59.6	57.8	6.65	97.0	145.0	139.6
55	58.2	56.5	6.75	97.0	148.8	143.3
56	56.8	55.1	6.85	97.0	152.5	146.8
57	55.4	53.7	6.95	97.0	156.1	150.3
58	54.0	52.4	7.05	97.0	159.6	153.8
59	52.5	50.9	7.15	97.0	163.1	157.1
60	51.0	49.5	7.25	97.0	166.4	160.3
61	49.5	48.0	7.35	97.0	169.6	163.4
62	47.9	46.5	7.45	97.0	172.7	166.4
63	46.3	44.9	7.55	97.0	175.7	169.3
64	44.7	43.4	7.65	97.0	178.6	172.1
65	43.1	41.8	7.74	97.0	181.3	174.8

## FERTILITY, HATCHABILITY AND CHICK WEIGHT

Breeder Flock Fertility, Hatchability and Chick Weight									
Week	Hatchability (%)		Fertility (%)		Hatch of Fertile (%)		Chicks / HH		Chick Weight (g)
	Weekly	Cum.	Weekly	Cum.	Weekly	Cum.	Weekly	Cum.	
24	72.0	72.0	88.0	88.0	81.8	81.8	0.1	0.1	32.7
25	77.2	76.7	90.5	90.3	85.3	85.0	0.8	0.9	33.8
26	80.0	79.0	92.8	92.1	86.2	85.9	2.2	3.1	34.7
27	82.1	80.7	94.0	93.1	87.3	86.7	3.8	6.9	35.8
28	83.8	81.9	95.0	93.8	88.2	87.3	4.5	11.4	36.9
29	85.2	82.8	95.5	94.3	89.2	87.8	4.8	16.2	37.8
30	86.4	83.6	96.0	94.7	90.0	88.3	4.9	21.1	38.6
31	87.5	84.4	96.4	95.0	90.8	88.8	5.0	26.1	39.4
32	88.5	85.0	96.6	95.3	91.6	89.2	5.0	31.0	40.0
33	89.4	85.6	96.7	95.4	92.5	89.7	5.0	36.0	40.5
34	90.0	86.1	96.7	95.6	93.1	90.1	4.9	40.9	41.0
35	90.0	86.5	96.7	95.7	93.1	90.4	4.9	45.8	41.4
36	89.9	86.8	96.7	95.8	93.0	90.6	4.8	50.6	41.9
37	89.7	87.0	96.6	95.9	92.9	90.8	4.7	55.3	42.3
38	89.5	87.2	96.6	95.9	92.7	90.9	4.6	60.0	42.6
39	89.3	87.4	96.6	96.0	92.4	91.0	4.6	64.5	42.9
40	89.0	87.5	96.5	96.0	92.2	91.1	4.4	68.9	43.2
41	88.7	87.5	96.4	96.0	92.0	91.2	4.3	73.3	43.5
42	88.4	87.6	96.3	96.0	91.8	91.2	4.3	77.5	43.8
43	88.1	87.6	96.2	96.0	91.6	91.2	4.2	81.7	44.1
44	87.7	87.6	96.1	96.0	91.3	91.2	4.1	85.8	44.3
45	87.3	87.6	96.1	96.0	90.8	91.2	4.0	89.7	44.6
46	86.9	87.6	96.0	96.0	90.5	91.2	3.9	93.6	44.9
47	86.5	87.5	95.8	96.0	90.3	91.1	3.8	97.4	45.1
48	86.1	87.5	95.5	96.0	90.2	91.1	3.7	101.1	45.4
49	85.6	87.4	95.3	96.0	89.8	91.1	3.6	104.7	45.6
50	85.1	87.3	95.0	96.0	89.6	91.0	3.5	108.2	45.8
51	84.6	87.2	94.8	95.9	89.2	91.0	3.4	111.6	46.0
52	84.1	87.2	94.5	95.9	89.0	90.9	3.3	115.0	46.2
53	83.6	87.1	94.2	95.8	88.7	90.8	3.2	118.2	46.4
54	83.1	86.9	93.8	95.8	88.6	90.8	3.1	121.3	46.5
55	82.6	86.8	93.3	95.7	88.5	90.7	3.0	124.4	46.6
56	82.0	86.7	92.7	95.6	88.5	90.7	2.9	127.3	46.8
57	81.5	86.6	92.2	95.6	88.4	90.6	2.9	130.2	46.9
58	81.0	86.5	91.7	95.5	88.3	90.6	2.8	133.0	47.0
59	80.6	86.3	91.3	95.4	88.3	90.5	2.7	135.6	47.2
60	80.1	86.2	90.8	95.3	88.2	90.5	2.6	138.2	47.3
61	79.7	86.1	90.4	95.2	88.2	90.4	2.5	140.7	47.5
62	79.2	86.0	89.9	95.1	88.1	90.4	2.4	143.1	47.6
63	78.7	85.8	89.4	95.0	88.0	90.4	2.3	145.3	47.7
64	78.3	85.7	89.0	94.9	88.0	90.3	2.2	147.5	47.9
65	77.8	85.6	88.5	94.8	87.9	90.3	2.1	149.6	48.0

Egg Weight and Grading							
Week	Egg Weight g	Egg Grading %					
		Small	2 Yolk	Cull	Hairline	Cracked	Floor Egg
24	48.5	18.0	2.5	7.0	9.0	3.5	20.0
25	50.0	9.0	3.0	2.5	4.0	2.5	8.0
26	51.4	5.0	3.5	2.5	4.0	2.5	5.0
27	53.0	3.0	2.2	0.8	0.7	0.3	<2.0
28	54.6	0.8	1.5	0.8	0.7	0.2	<2.0
29	56.0	0.5	1.5	0.3	0.5	0.2	<2.0
30	57.2	0.2	1.0	0.3	0.5	0.5	<2.0
31	58.3	0.0	0.6	0.2	0.5	0.2	<2.0
32	59.2	0.0	0.5	0.2	0.5	0.3	<2.0
33	60.0	0.0	0.5	0.2	0.5	0.3	<2.0
34	60.7	0.0	0.2	0.2	0.5	0.3	<2.0
35	61.4	0.0	0.1	0.3	0.5	0.3	<2.0
36	62.0	0.0	0.1	0.3	0.5	0.3	<2.0
37	62.6	0.0	0.1	0.3	0.5	0.3	<2.0
38	63.1	0.0	0.0	0.3	0.7	0.2	<2.0
39	63.6	0.0	0.0	0.3	0.7	0.2	<2.0
40	64.0	0.0	0.0	0.5	1.0	0.5	<2.0
41	64.5	0.0	0.0	0.5	1.0	0.5	<2.0
42	64.9	0.0	0.0	0.5	1.0	0.5	<2.0
43	65.3	0.0	0.0	0.5	1.0	0.5	<2.0
44	65.7	0.0	0.0	0.5	1.0	0.5	<2.0
45	66.1	0.0	0.0	0.5	1.0	0.5	<2.0
46	66.5	0.0	0.0	0.5	1.0	0.5	<2.0
47	66.8	0.0	0.0	0.5	1.0	0.5	<2.0
48	67.2	0.0	0.0	0.5	1.0	0.5	<2.0
49	67.5	0.0	0.0	0.5	1.0	0.5	<2.0
50	67.8	0.0	0.0	0.5	1.0	0.5	<2.0
51	68.1	0.0	0.0	0.5	1.0	0.5	<2.0
52	68.4	0.0	0.0	0.5	1.0	0.5	<2.0
53	68.7	0.0	0.0	0.5	1.0	0.5	<2.0
54	68.9	0.0	0.0	0.5	1.0	0.5	<2.0
55	69.1	0.0	0.0	0.5	1.0	0.5	<2.0
56	69.3	0.0	0.0	0.5	1.0	0.5	<2.0
57	69.5	0.0	0.0	0.5	1.0	0.5	<2.0
58	69.7	0.0	0.0	0.5	1.0	0.5	<2.0
59	69.9	0.0	0.0	0.5	1.0	0.5	<2.0
60	70.1	0.0	0.0	0.5	1.0	0.5	<2.0
61	70.3	0.0	0.0	0.5	1.0	0.5	<2.0
62	70.5	0.0	0.0	0.5	1.0	0.5	<2.0
63	70.7	0.0	0.0	0.5	1.0	0.5	<2.0
64	70.9	0.0	0.0	0.5	1.0	0.5	<2.0
65	71.1	0.0	0.0	0.5	1.0	0.5	<2.0

Embryo Diagnosis							
Week	Fertility %	Hatchability %	Embryo Diagnosis %				HOF %
			Infertile	Early	Mid	Late	
24	88.0	72.0	12.0	7.3	0.5	8.2	81.8
25	90.5	77.2	9.5	6.0	0.5	6.8	85.3
26	92.8	80.0	7.2	5.7	0.5	6.6	86.2
27	94.0	82.1	6.0	5.4	0.5	6.0	87.3
28	95.0	83.8	5.0	5.0	0.5	5.7	88.2
29	95.5	85.2	4.5	4.4	0.5	5.4	89.2
30	96.0	86.4	4.0	4.2	0.5	4.9	90.0
31	96.4	87.5	3.6	3.9	0.5	4.5	90.8
32	96.6	88.5	3.4	3.5	0.5	4.1	91.6
33	96.7	89.4	3.3	3.3	0.5	3.5	92.5
34	96.7	90.0	3.3	2.8	0.5	3.4	93.1
35	96.7	90.0	3.3	2.8	0.5	3.4	93.1
36	96.7	89.9	3.3	2.9	0.5	3.4	93.0
37	96.6	89.7	3.4	2.9	0.5	3.5	92.9
38	96.6	89.5	3.4	3.0	0.5	3.6	92.7
39	96.6	89.3	3.4	3.1	0.5	3.7	92.4
40	96.5	89.0	3.5	3.2	0.5	3.8	92.2
41	96.4	88.7	3.6	3.3	0.5	3.9	92.0
42	96.3	88.4	3.7	3.4	0.5	4.0	91.8
43	96.2	88.1	3.8	3.5	0.5	4.1	91.6
44	96.1	87.7	3.9	3.6	0.5	4.3	91.3
45	96.1	87.3	3.9	4.0	0.5	4.3	90.8
46	96.0	86.9	4.0	4.0	0.5	4.6	90.5
47	95.8	86.5	4.2	4.1	0.5	4.7	90.3
48	95.5	86.1	4.5	4.2	0.5	4.7	90.2
49	95.3	85.6	4.7	4.4	0.5	4.8	89.8
50	95.0	85.1	5.0	4.4	0.5	5.0	89.6
51	94.8	84.6	5.2	4.6	0.5	5.1	89.2
52	94.5	84.1	5.5	4.7	0.5	5.2	89.0
53	94.2	83.6	5.8	4.7	0.5	5.4	88.7
54	93.8	83.1	6.2	4.7	0.5	5.5	88.6
55	93.3	82.6	6.7	4.7	0.5	5.5	88.5
56	92.7	82.0	7.3	4.7	0.5	5.5	88.5
57	92.2	81.5	7.8	4.7	0.5	5.5	88.4
58	91.7	81.0	8.3	4.7	0.5	5.5	88.3
59	91.3	80.6	8.7	4.7	0.5	5.5	88.3
60	90.8	80.1	9.2	4.7	0.5	5.5	88.2
61	90.4	79.7	9.6	4.7	0.5	5.5	88.2
62	89.9	79.2	10.1	4.7	0.5	5.5	88.1
63	89.4	78.7	10.6	4.7	0.5	5.5	88.0
64	89.0	78.3	11.0	4.7	0.5	5.5	88.0
65	88.5	77.8	11.5	4.7	0.5	5.5	87.9



Recommended Nutrient Levels for Cobb500 Breeders							
Phase Age (Days)	Unit	Starter 0 - 28	Grower 29 - 105	Developer 106 - 1 <sup>st</sup> Egg	Breeder 1 1 <sup>st</sup> Egg - 266	Breeder 2 > 267	Male*
Metabolizable Energy**	MJ/kg	11.92	11.30	11.72	11.72	11.72	11.30
	kcal/kg	2850	2700	2800	2800	2800	2700
	kcal/lb	1293	1225	1270	1270	1270	1225
Crude Protein	%	19.0	14.5	15.0	15.0	14.5	13.0
Calcium	%	0.95	0.95	1.20	3.00	3.20	0.95
Av. Phosphorus	%	0.45	0.42	0.42	0.42	0.38	0.42
Sodium	%	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24
Chloride	%	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24	0.15 - 0.24
Potassium	%	0.60	0.60	0.60	0.60	0.60	0.60
Linoleic Acid	%	1.00	1.00	1.00	1.25	1.25	1.00
Digestible Amino Acids							
Lysine	%	0.93	0.60	0.63	0.63	0.60	0.50
Methionine	%	0.42	0.31	0.33	0.33	0.31	0.28
M + C	%	0.70	0.51	0.54	0.55	0.52	0.48
Tryptophan	%	0.20	0.13	0.14	0.14	0.13	0.12
Threonine	%	0.65	0.45	0.47	0.47	0.45	0.44
Arginine	%	0.98	0.66	0.69	0.69	0.66	0.55
Valine	%	0.67	0.45	0.47	0.47	0.45	0.38
Isoleucine	%	0.64	0.42	0.44	0.44	0.42	0.40

Digestible Amino Acid Levels					
Recommended Digestible Amino Acid Levels Based on Amino Acid / Lysine Ratios					
Phase Age (Days)	Unit	Starter 0 - 28	Grower / Developer 29 - 1 <sup>st</sup> Egg	Breeder 1 <sup>st</sup> Egg +	Male*
Lysine	%	100	100	100	100
Methionine	%	45	52	52	55
M + C	%	75	85	87	95
Tryptophan	%	21	22	22	24
Threonine	%	70	75	75	87
Arginine	%	105	110	110	110
Valine	%	72	75	75	75
Isoleucine	%	68	70	70	80

\* Change to male feed is suggested at 28 weeks of age. The higher nutrient level in breeder feed may assist with testicular development in the final phase of male sexual maturity at 24 to 30 weeks. However, it can be earlier at 21 to 22 weeks if males are consuming feed from female feeders.

\*\* If the energy level needs to be adjusted for local conditions, then all other nutrients (protein/amino acids) need to be adjusted at the same ratio.

- ✓ The energy values are based on AMEn apparent metabolizable energy corrected by nitrogen, WPSA.
- ✓ The amino acids values are based on Standardized Ileal Digestibility (SID) assays.
- ✓ Add at least 0.75 to 1% added ingredient fat or oil (to developer, breeder 1 and 2) throughout the year in tropical and subtropical regions or during the hot summer months.
- ✓ The Cobb nutrient recommendations are based on crumble feed. If mash feed is provided, increase 50 to 100 kcal/kg to the energy recommendations.

Supplementary Vitamins and Trace Elements			
Recommended Supplementary Levels of Vitamins and Trace Elements Per Metric Tonne Basis			
Nutrients	Unit	Starter / Developer / Males	Breeders in Production
Vit. A (Maize Diets)	KIU	10,000	12,000
Vit. A (Wheat Diets)	KIU	11,000	13,000
Vit. D3	KIU	3,500	3,500
Vit. E	KIU	100	100
Vit. K	g	3	6
Thiamine (B1)	g	2.75	3.00
Riboflavin (B2)	g	8	13
Pantothenic Acid	g	15	20
Niacin	g	40	50
Pyridoxine (B6)	g	3	6
Folic Acid	g	2	3
Vit. B12	g	0.025	0.035
Biotin (Maize Diets)	g	0.25	0.30
Biotin (Wheat Diets)	g	0.300	0.375
Choline	g	500	500
Manganese	g	100	120
Zinc	g	100	110
Iron	g	20 - 50	40 - 55
Copper	g	10 - 15	10 - 15
Iodine	g	1.5	2.0
Selenium	g	0.30	0.30

KIU = thousand international units

g = grams

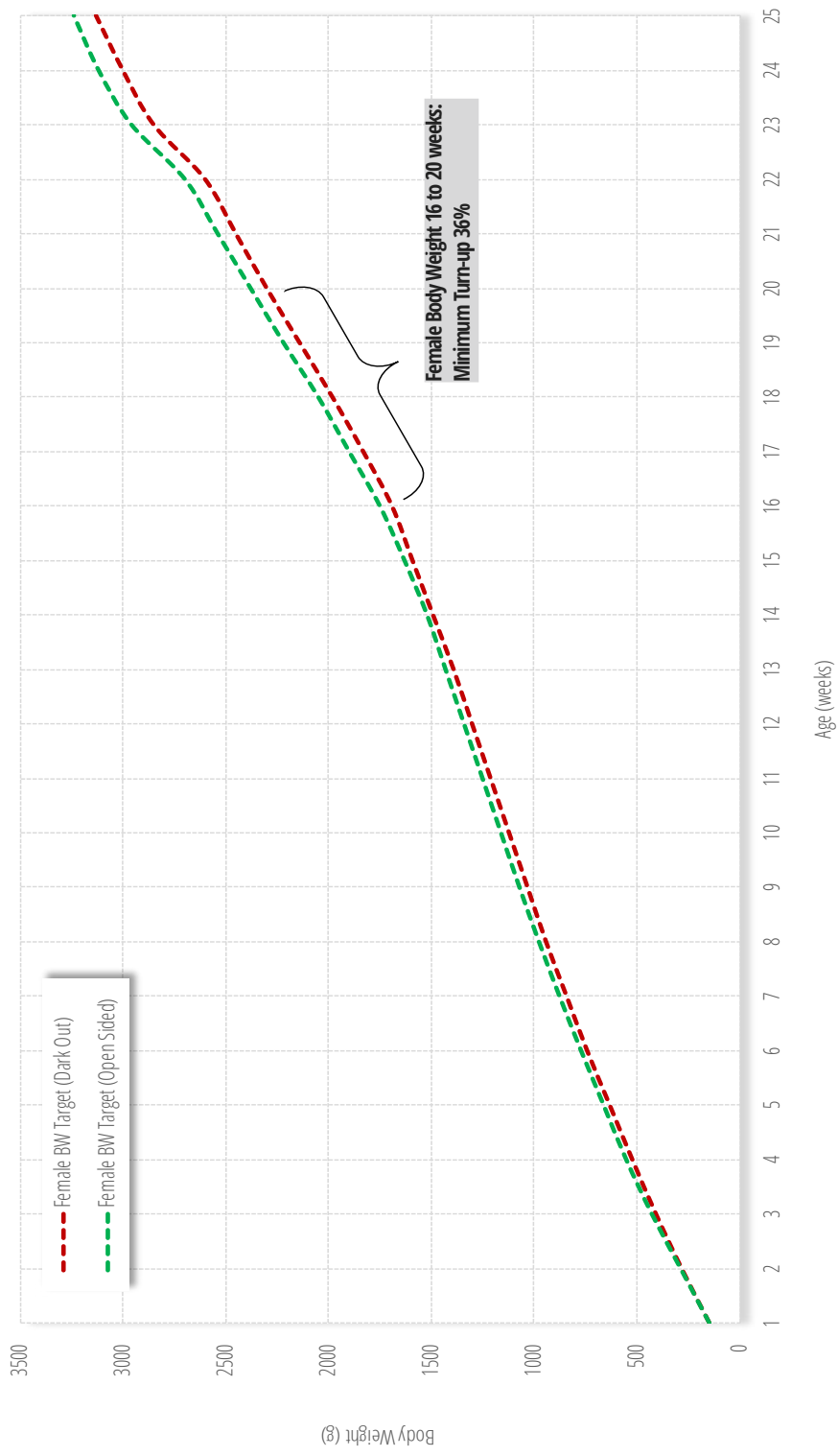
Supplementary levels of vitamins and trace elements should always be reviewed to ensure total levels do not exceed those set in local legislation.

# Cobb 500™ Fast Feather Rearing Management Record (Grams)

<b>Company Rearing Farm:</b>	<b>House Number:</b>	
<b>Placement Date:</b>	<b>Female</b>	<b>Male</b>
<b>Number Placed:</b>	<b>Female</b>	<b>Male</b>

<b>Breeder Farm:</b>	<b>House Number:</b>	
<b>Date Moved:</b>	<b>Female</b>	<b>Male</b>
<b>Number Transferred:</b>	<b>Female</b>	<b>Male</b>
<b>Point-of-lay Number:</b>	<b>Female</b>	<b>Male</b>

Age	Weeks	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
FEMALE BW	BW Target (Dark Out)	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175	
	BW Target (Open Sided)	145	280	405	520	630	740	840	940	1030	1120	1210	1300	1390	1480	1570	1660	1750	1830	1900	1980	2050	2140	2300	2450	2600	2850	3000
FEMALE FEED	BW Actual	145	285	425	550	660	770	875	975	1070	1160	1250	1340	1430	1520	1630	1750	1900	2050	2220	2380	2540	2700	2960	3120	3240		
	Weekly Gain																											
FEMALE MORTALITY	Uniformity																											
	Feed Guide (g/b/d)																											
MALE BW	Feed Actual (g/b/d)																											
	Feed Energy																											
MALE FEED	Female # of Birds																											
	Weekly Mortality (%)																											
MALE MORTALITY	Cumulative Mortality (%)																											
	BW Target																											
Water Consumption	BW Actual																											
	Uniformity																											
Temperature	Feed Guide (g/b/d)																											
	Feed Actual (g/b/d)																											
Light Hours	Feed Energy																											
	Feed Type																											
Water Consumption	Male # of Birds																											
	Weekly Mortality (%)																											
Temperature	Cumulative Mortality (%)																											



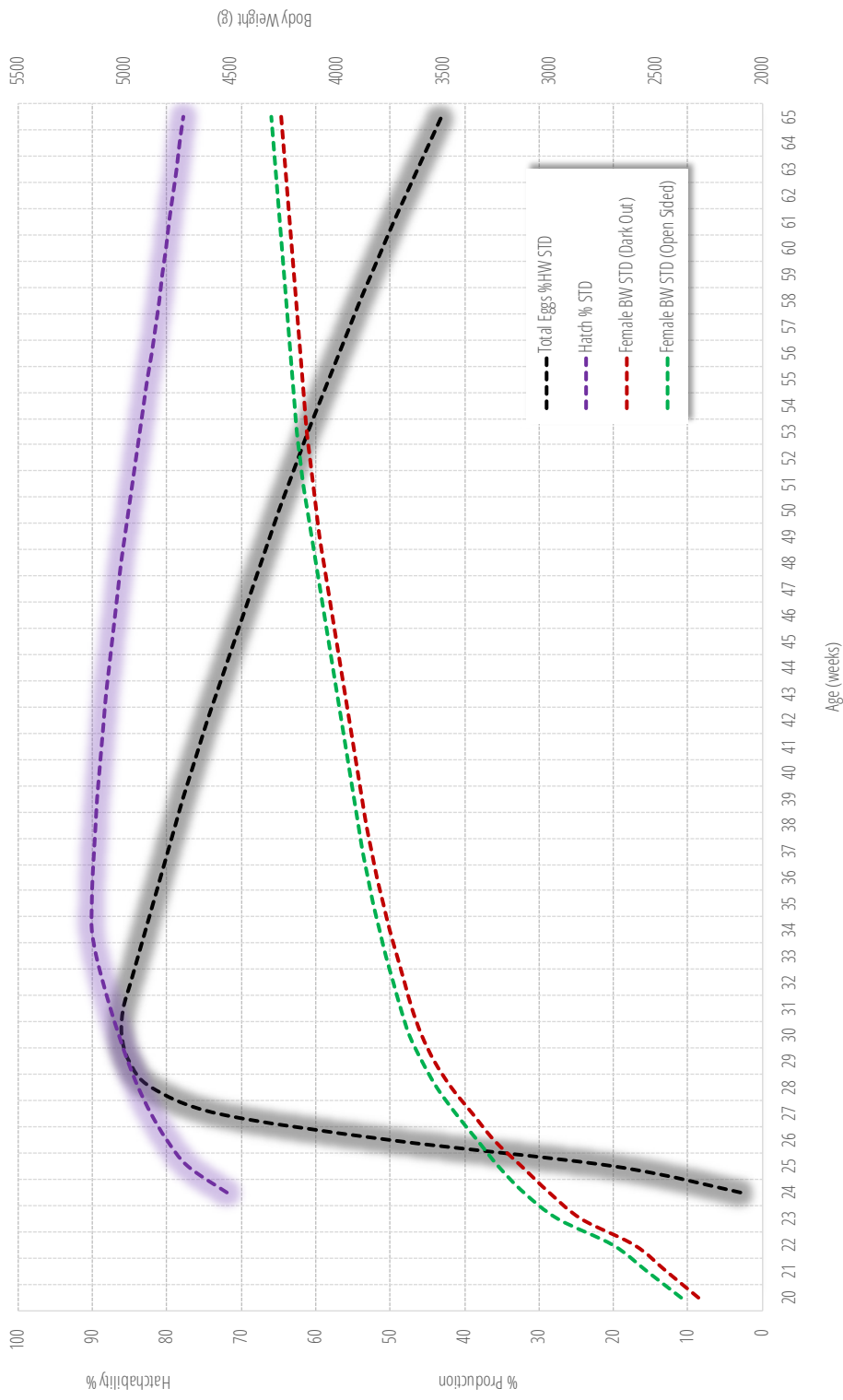
## Cobb 500™ Fast Feather Production Management Record (Grams)

<b>Company</b>		<b>House Number:</b>	
<b>Rearing Farm:</b>		<b>Male</b>	
<b>Placement Date:</b>	<b>Female</b>	<b>Male</b>	
<b>Number Placed:</b>	<b>Female</b>	<b>Male</b>	

<b>Breeder Farm:</b>		<b>House Number:</b>	
<b>Date Moved:</b>	<b>Female</b>	<b>Male</b>	
<b>Number Transferred:</b>	<b>Female</b>	<b>Male</b>	
<b>Point-of-lay Number:</b>	<b>Female</b>	<b>Male</b>	
<b>Age at Light Stimulation:</b>			

Age (weeks)	Female No.	Male No.	Total Eggs (%HW)	Female Feed	Female BW (Dark Out)	Female BW (Open Sided)	Female BW Actual	Male Feed	Male BW STD	Male BW Actual	Hatch %
20					2300	2380					
21					2450	2540					
22					2600	2700					
23					2850	2960					
24		3.0			3000	3120					
25		20.0			3130	3240					
26		50.0			3260	3340					
27		73.0			3360	3440					
28		82.0			3460	3530					
29		85.0			3540	3600					
30		86.0			3600	3660					
31		85.8			3645	3700					
32		84.8			3680	3735					
33		83.8			3715	3770					
34		82.8			3750	3800					
35		81.8			3780	3830					
36		80.8			3810	3855					
37		79.8			3835	3880					
38		78.8			3860	3900					
39		77.8			3880	3920					
40		76.7			3900	3940					
41		75.6			3920	3960					
42		74.5			3940	3980					

Age (weeks)	Female No.	Male No.	Total Eggs (%HW)	Female Feed	Female BW (Dark Out)	Female BW (Open Sided)	Female BW Actual	Male Feed	Male BW STD	Male BW Actual	Hatch %
43			73.3		3960	4000					
44			72.1		3980	4020					
45			70.9		4000	4040					
46			69.7		4020	4060					
47			68.5		4040	4080					
48			67.3		4060	4100					
49			66.1		4080	4120					
50			64.9		4095	4140					
51			63.6		4110	4160					
52			62.3		4125	4175					
53			61.0		4140	4190					
54			59.6		4150	4200					
55			58.2		4160	4210					
56			56.8		4170	4220					
57			55.4		4180	4230					
58			54.0		4190	4240					
59			52.5		4200	4250					
60			51.0		4210	4260					
61			49.5		4220	4270					
62			47.9		4230	4280					
63			46.3		4240	4290					
64			44.7		4250	4300					
65			43.1		4260	4310					

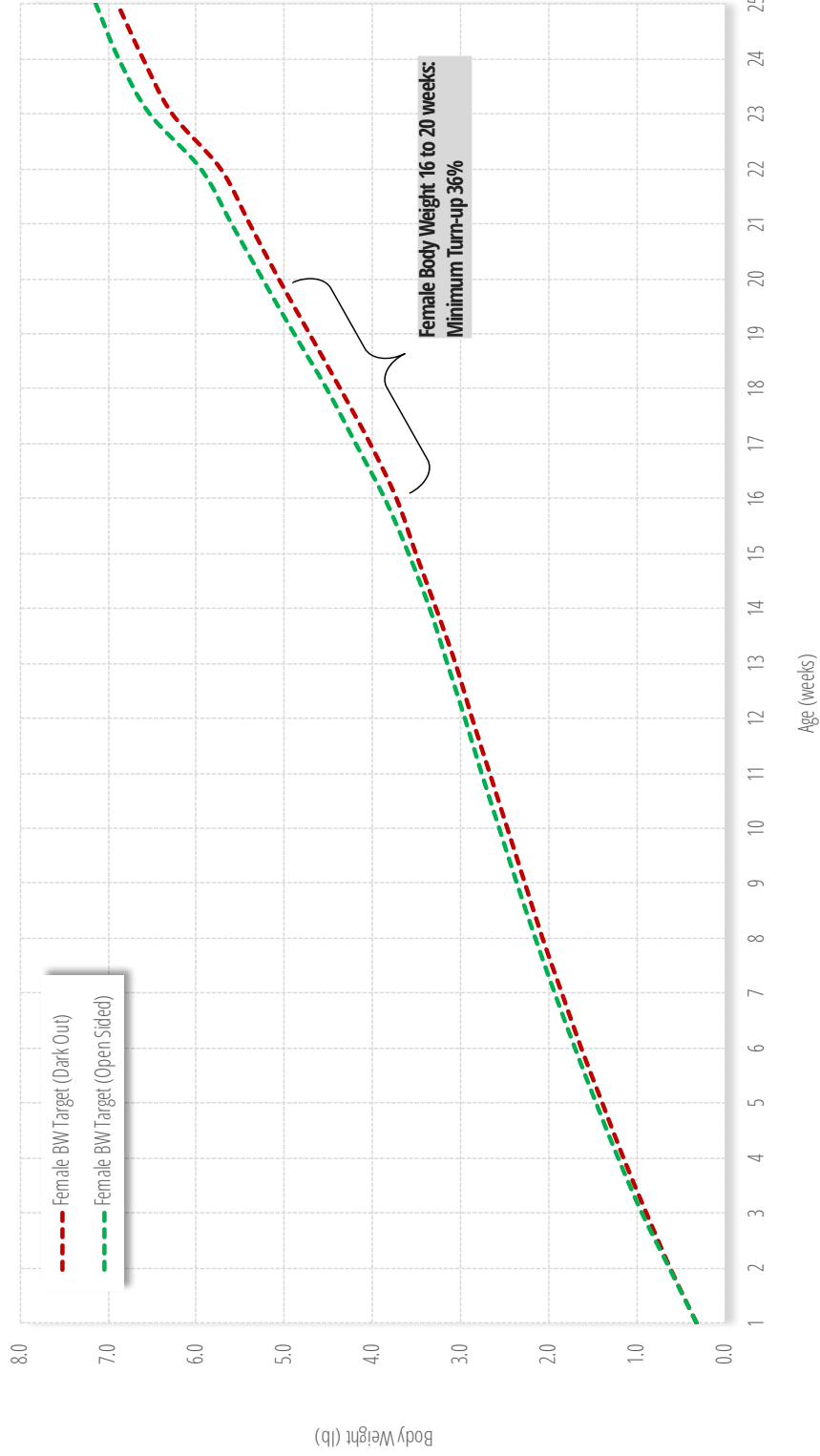


# Cobb 500™ Fast Feather Rearing Management Record (Pounds)

<b>Company</b>	
<b>Rearing Farm:</b>	<b>House Number:</b>
<b>Placement Date:</b>	<b>Male</b>
<b>Number Placed:</b>	<b>Female</b>

<b>Breeder Farm:</b>	<b>House Number:</b>	
<b>Date Moved:</b>	<b>Male</b>	<b>Female</b>
<b>Number Transferred:</b>	<b>Male</b>	<b>Female</b>
<b>Point-of-lay Number:</b>	<b>Male</b>	<b>Female</b>

Age	Weeks																									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<b>FEMALE BW</b>	0.32	0.62	0.89	1.15	1.39	1.63	1.85	2.07	2.27	2.47	2.67	2.87	3.06	3.28	3.51	3.73	4.03	4.37	4.72	5.07	5.40	5.73	6.28	6.61	6.90	7.14
<b>FEMALE FEED</b>	0.32	0.63	0.94	1.21	1.46	1.70	1.93	2.15	2.36	2.56	2.76	2.95	3.15	3.35	3.59	3.86	4.19	4.52	4.89	5.25	5.60	5.95	6.53	6.88	7.14	
<b>FEMALE MORTALITY</b>																										
<b>MALE BW</b>																										
<b>MALE FEED</b>																										
<b>MALE MORTALITY</b>																										
Light Hours																										
Water Consumption																										
Temperature																										



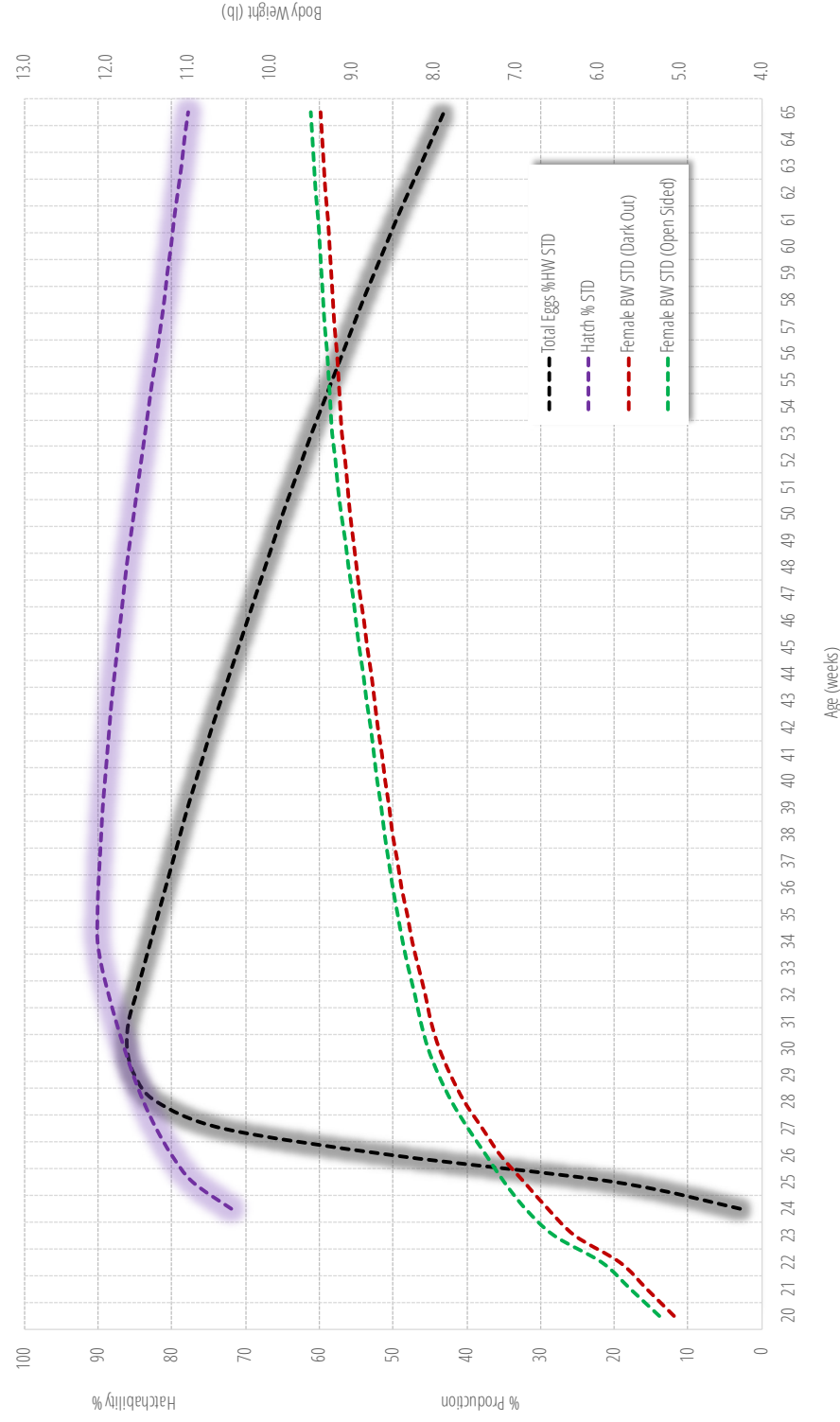
### Cobb 500™ Fast Feather Production Management Record (Pounds)

Company		House Number:	
Rearing Farm:		Male	
Placement Date:	Female	Male	
Number Placed:	Female	Male	

Breeder Farm:		House Number:	
Date Moved:	Female	Male	
Number Transferred:	Female	Male	
Point-of-lay Number:	Female	Male	
Age at Light Stimulation:			

Age (weeks)	Female No.	Male No.	Total Eggs (%HW)	Female Feed	Female BW (Dark Out)	Female BW (Open Sided)	Female BW Actual	Male Feed	Male BW STD	Male BW Actual	Hatch %
20					5.07	5.25					
21					5.40	5.60					
22					5.73	5.95					
23					6.28	6.53					
24		3.0			6.61	6.88					
25		20.0			6.90	7.14					
26		50.0			7.19	7.36					
27		73.0			7.41	7.58					
28		82.0			7.63	7.78					
29		85.0			7.80	7.94					
30		86.0			7.94	8.07					
31		85.8			8.04	8.16					
32		84.8			8.11	8.23					
33		83.8			8.19	8.31					
34		82.8			8.27	8.38					
35		81.8			8.33	8.44					
36		80.8			8.40	8.50					
37		79.8			8.45	8.55					
38		78.8			8.51	8.60					
39		77.8			8.55	8.64					
40		76.7			8.60	8.69					
41		75.6			8.64	8.73					
42		74.5			8.69	8.77					

Age (weeks)	Female No.	Male No.	Total Eggs (%HW)	Female Feed	Female BW (Dark Out)	Female BW (Open Sided)	Female BW Actual	Male Feed	Male BW STD	Male BW Actual	Hatch %
43			73.3		8.73	8.82					
44			72.1		8.77	8.86					
45			70.9		8.82	8.91					
46			69.7		8.86	8.95					
47			68.5		8.91	8.99					
48			67.3		8.95	9.04					
49			66.1		8.99	9.08					
50			64.9		9.03	9.13					
51			63.6		9.06	9.17					
52			62.3		9.09	9.20					
53			61.0		9.13	9.24					
54			59.6		9.15	9.26					
55			58.2		9.17	9.28					
56			56.8		9.19	9.30					
57			55.4		9.22	9.33					
58			54.0		9.24	9.35					
59			52.5		9.26	9.37					
60			51.0		9.28	9.39					
61			49.5		9.30	9.41					
62			47.9		9.33	9.44					
63			46.3		9.35	9.46					
64			44.7		9.37	9.48					
65			43.1		9.39	9.50					







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