

# Breeder Management Supplement

Fast Feather  
Package

Cobb500™

breeder

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# Cobb500 Breeder Management Supplement FF Package

## Introduction

This Cobb Breeder Management Supplement is to be used in conjunction with the Cobb Breeder Management Guide and the Cobb Breeder Nutrition Supplement to assist you in building your management program. Management must not only meet the basic needs of the stock but also be fine tuned to attain the full potential of the breed. Our recommendations in this booklet are based on current scientific knowledge and practical experience, and reflect the genetic potential of the Cobb hen based on Total Egg and Hatch Percent records taken from the top 25% of Cobb flocks worldwide. This booklet 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 should choose to adopt.

Please contact your Cobb Technical Representative for further assistance.

Revised 2013

## Breeder Performance

Age at depletion	(weeks) (days)	60 420	65 455
Age at 5% production	(weeks) (days)	24 168	24 168
Total eggs/hen housed		166.2	181.3
Hatching eggs/hen housed	(50g minimum)	161.5	176.3
Peak hatchability	(%)	90	90
Cumulative hatchability	(%)	86.2	85.6
Broiler chicks/hen housed		139.2	150.9
Livability from 24 weeks	(%)	92.8	92.3

		<b>Dark Out</b>	<b>Open Sided</b>
Female bodyweight (24 weeks)	(kg)	2.90	3.01
	(lb)	6.39	6.64
Female bodyweight (65 weeks)	(kg)	3.95	4.04
	(lb)	8.71	8.91

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## Female Body Weights Dark-out Rearing

Age		Bodyweight		Body Weight Gain %
days	weeks	grams	pounds	
0				
7	1	160	0.35	
14	2	280	0.62	75%
21	3	400	0.88	43%
28	4	520	1.15	30%
35	5	620	1.37	19%
42	6	720	1.59	16%
49	7	820	1.81	14%
56	8	920	2.03	12%
63	9	1020	2.25	11%
70	10	1105	2.44	8%
77	11	1190	2.62	8%
84	12	1280	2.82	8%
91	13	1365	3.01	7%
98	14	1450	3.20	6%
105	15	1530	3.37	6%
112	16	1610	3.55	5%
119	17	1745	3.85	8%
126	18	1880	4.14	8%
133	19	2015	4.44	7%
140	20	2150	4.74	7%
147	21	2410	5.31	12%
154	22	2575	5.68	7%
161	23	2735	6.03	6%
168	24	2900	6.39	6%
175	25	3000	6.61	3%
182	26	3100	6.83	3%
189	27	3200	7.05	3%
196	28	3300	7.28	3%
203	29	3380	7.45	2%
210	30	3440	7.58	2%

Please refer to the Cobb Breeder Management Guide for general flock management recommendations, as well as guidelines concerning post peak feeding.

Weights correspond to the weekly anniversary date.

Weights for weeks 2 through 20 are off-feed weights. From 21 weeks onward, (or when the change is made to everyday feeding), birds can be weighed after a minimum of two hours has passed from the time of complete cleanup of the day's ration.

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## Female Body Weights Open Sided Rearing

Age		Bodyweight		Body Weight Gain %
days	weeks	grams	pounds	
0				
7	1	160	0.35	
14	2	285	0.63	78%
21	3	410	0.90	44%
28	4	540	1.19	32%
35	5	645	1.42	19%
42	6	750	1.65	16%
49	7	850	1.87	13%
56	8	950	2.09	12%
63	9	1050	2.31	11%
70	10	1160	2.56	10%
77	11	1250	2.76	8%
84	12	1335	2.94	7%
91	13	1420	3.13	6%
98	14	1505	3.32	6%
105	15	1590	3.51	6%
112	16	1680	3.70	6%
119	17	1790	3.95	7%
126	18	1930	4.25	8%
133	19	2090	4.61	8%
140	20	2250	4.96	8%
147	21	2510	5.53	12%
154	22	2675	5.90	7%
161	23	2845	6.27	6%
168	24	3010	6.64	6%
175	25	3105	6.85	3%
182	26	3200	7.05	3%
189	27	3290	7.25	3%
196	28	3385	7.46	3%
203	29	3480	7.67	3%
210	30	3570	7.87	3%

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Weights correspond to the weekly anniversary date.

Weights for weeks 2 through 20 are off-feed weights. From 21 weeks onward, (or when the change is made to everyday feeding), birds can be weighed after a minimum of two hours has passed from the time of complete cleanup of the day's ration.

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## Female Adult Body Weights (30-65 weeks)

Age weeks	Dark Out Female Body Weight		Open Sided Female Body Weight	
	grams	pounds	grams	pounds
30	3440	7.58	3570	7.87
31	3460	7.63	3595	7.93
32	3480	7.67	3615	7.97
33	3500	7.72	3635	8.01
34	3520	7.76	3655	8.06
35	3540	7.80	3675	8.10
36	3560	7.85	3695	8.15
37	3580	7.89	3715	8.19
38	3600	7.94	3735	8.23
39	3620	7.98	3755	8.28
40	3640	8.02	3770	8.31
41	3660	8.07	3785	8.34
42	3675	8.10	3800	8.38
43	3690	8.14	3815	8.41
44	3705	8.17	3830	8.44
45	3720	8.20	3845	8.48
46	3735	8.23	3860	8.51
47	3750	8.27	3875	8.54
48	3765	8.30	3890	8.58
49	3780	8.33	3905	8.61
50	3795	8.37	3915	8.63
51	3810	8.40	3925	8.65
52	3820	8.42	3935	8.68
53	3830	8.44	3945	8.70
54	3840	8.47	3955	8.72
55	3850	8.49	3965	8.74
56	3860	8.51	3975	8.76
57	3870	8.53	3985	8.79
58	3880	8.55	3995	8.81
59	3890	8.58	4005	8.83
60	3900	8.60	4015	8.85
61	3910	8.62	4020	8.86
62	3920	8.64	4025	8.87
63	3930	8.66	4030	8.88
64	3940	8.69	4035	8.90
65	3950	8.71	4040	8.91

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## Male Body Weights

Age weeks	grams	pounds	Age weeks	grams	pounds
0			33	4085	9.00
1	145	0.32	34	4105	9.05
2	340	0.75	35	4130	9.10
3	520	1.15	36	4150	9.15
4	665	1.45	37	4170	9.20
5	800	1.75	38	4195	9.25
6	930	2.05	39	4215	9.30
7	1060	2.35	40	4240	9.35
8	1190	2.65	41	4260	9.40
9	1320	2.95	42	4285	9.45
10	1455	3.20	43	4305	9.50
11	1570	3.45	44	4330	9.55
12	1695	3.75	45	4350	9.60
13	1810	4.00	46	4370	9.65
14	1920	4.25	47	4395	9.70
15	2035	4.50	48	4415	9.75
16	2160	4.75	49	4440	9.80
17	2300	5.05	50	4460	9.85
18	2450	5.35	51	4485	9.90
19	2600	5.65	52	4505	9.95
20	2725	5.95	53	4530	10.00
21	2850	6.25	54	4550	10.05
22	2970	6.55	55	4575	10.10
23	3230	7.10	56	4595	10.15
24	3355	7.40	57	4615	10.20
25	3485	7.70	58	4640	10.23
26	3610	8.00	59	4660	10.27
27	3735	8.25	60	4685	10.31
28	3865	8.50	61	4700	10.35
29	3930	8.65	62	4715	10.39
30	3970	8.75	63	4730	10.43
31	4015	8.85	64	4745	10.46
32	4060	8.95	65	4760	10.50

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## Egg Weights

Age weeks	Egg Weight grams		Age weeks	Egg Weight grams
24	48.5		45	65.9
25	49.9		46	66.3
26	51.3		47	66.7
27	52.7		48	67.0
28	54.2		49	67.4
29	56.1		50	67.8
30	57.2		51	68.1
31	58.3		52	68.4
32	58.9		53	68.7
33	59.7		54	68.8
34	60.7		55	68.9
35	61.4		56	69.0
36	61.7		57	69.1
37	62.5		58	69.2
38	62.7		59	69.3
39	63.2		60	69.4
40	63.7		61	69.5
41	64.3		62	69.6
42	64.7		63	69.7
43	65.1		64	69.8
44	65.5		65	69.9

Egg weights are dependent on the bodyweight and production level of the hens, as well as the level of nutrition being fed to the flock. These numbers are a guide only, and could vary considerably according to management conditions.



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## Breeder Performance

Age in weeks	Total Eggs (%HW)	Hatching Eggs (%HW)	Mortality (%)	% HE (weekly)	Total Eggs (HH)	Hatch. Eggs (HH)	Weekly (%) Hatch	Chicks (HH)
24	5.0	2.0	0.25	40.0	0.3	0.1	72.0	0.1
25	15.0	11.3	0.50	75.0	1.4	0.9	78.0	0.7
26	45.0	36.9	0.80	82.0	4.5	3.5	80.0	2.8
27	65.0	58.5	1.30	90.0	9.0	7.5	82.0	6.1
28	80.0	76.0	1.70	95.0	14.5	12.8	84.0	10.5
29	85.0	81.6	2.05	96.0	20.3	18.4	85.0	15.2
30	86.0	83.4	2.35	97.0	26.2	24.1	86.0	20.1
31	85.8	83.6	2.60	97.5	32.1	29.8	87.0	25.1
32	84.8	83.1	2.80	98.0	37.8	35.4	88.0	30.1
33	83.8	82.9	3.00	99.0	43.5	41.0	89.0	35.1
34	82.8	81.9	3.20	99.0	49.1	46.6	90.0	40.1
35	81.8	80.9	3.40	99.0	54.7	52.1	89.9	45.0
36	80.8	79.9	3.60	99.0	60.1	57.5	89.8	49.8
37	79.8	79.0	3.80	99.0	65.5	62.8	89.6	54.6
38	78.8	77.2	4.00	98.0	70.8	68.0	89.4	59.2
39	77.8	76.2	4.20	98.0	76.0	73.1	89.1	63.8
40	76.8	75.2	4.40	98.0	81.1	78.1	88.9	68.3
41	75.8	74.2	4.65	98.0	86.2	83.1	88.6	72.6
42	74.8	73.3	4.90	98.0	91.1	87.9	88.3	76.9
43	73.8	72.3	5.15	98.0	96.0	92.7	87.9	81.2
44	72.8	71.3	5.35	98.0	100.9	97.5	87.5	85.3
45	71.8	70.3	5.50	98.0	105.6	102.1	87.1	89.3
46	70.8	69.3	5.65	98.0	110.3	106.7	86.7	93.3
47	69.5	68.1	5.80	98.0	114.9	111.2	86.3	97.2
48	68.3	66.9	5.95	98.0	119.4	115.6	85.9	101.0
49	67.0	65.7	6.10	98.0	123.8	119.9	85.5	104.6
50	65.8	64.4	6.25	98.0	128.1	124.1	85.1	108.2
51	64.5	63.2	6.35	98.0	132.3	128.3	84.7	111.8
52	63.3	62.0	6.45	98.0	136.4	132.3	84.3	115.2
53	62.0	60.8	6.55	98.0	140.5	136.3	83.9	118.5
54	60.8	59.5	6.65	98.0	144.5	140.2	83.4	121.8
55	59.5	58.3	6.75	98.0	148.4	144.0	82.9	124.9
56	58.0	56.8	6.85	98.0	152.1	147.7	82.4	128.0
57	56.5	55.4	6.95	98.0	155.8	151.3	81.9	130.9
58	55.0	53.9	7.05	98.0	159.4	154.8	81.4	133.8
59	53.5	52.4	7.15	98.0	162.9	158.2	80.9	136.5
60	51.9	50.9	7.25	98.0	166.2	161.5	80.4	139.2
61	50.2	49.1	7.35	98.0	169.5	164.7	79.9	141.7
62	48.4	47.4	7.45	98.0	172.6	167.8	79.4	144.2
63	46.7	45.7	7.55	98.0	175.7	170.7	78.9	146.5
64	44.9	44.0	7.65	98.0	178.6	173.6	78.4	148.7
65	43.2	42.3	7.74	98.0	181.3	176.3	77.9	150.9

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## Breeder Flock Fertility and Hatchability

Age in Weeks	Hatchability (%)		Fertility (%)		Hatch of fertiles (%)		Chick No./hen housed	
	Weekly	Cum.	Weekly	Cum.	Weekly	Cum.	Weekly	Cum.
24	72.0	72.0	88.0	88.0	81.8	81.8	0.10	0.1
25	78.0	77.1	90.0	89.7	86.7	85.9	0.61	0.7
26	80.0	79.2	93.0	92.1	86.0	86.0	2.05	2.8
27	82.0	80.7	94.0	93.1	87.2	86.7	3.31	6.1
28	84.0	82.1	95.0	93.9	88.4	87.4	4.39	10.5
29	85.0	83.0	95.0	94.2	89.5	88.0	4.76	15.2
30	86.0	83.7	96.0	94.7	89.6	88.4	4.90	20.1
31	87.0	84.3	96.5	95.0	90.2	88.7	4.96	25.1
32	88.0	84.9	96.5	95.2	91.2	89.1	4.97	30.1
33	89.0	85.5	96.7	95.4	92.0	89.5	5.01	35.1
34	90.0	86.0	96.7	95.6	93.1	90.0	5.00	40.1
35	89.9	86.4	96.7	95.7	93.0	90.3	4.92	45.0
36	89.8	86.7	96.7	95.8	92.9	90.5	4.84	49.8
37	89.6	87.0	96.6	95.9	92.8	90.7	4.76	54.6
38	89.4	87.2	96.6	95.9	92.5	90.9	4.63	59.2
39	89.1	87.3	96.5	96.0	92.3	91.0	4.55	63.8
40	88.9	87.4	96.5	96.0	92.1	91.0	4.47	68.3
41	88.6	87.5	96.4	96.0	91.9	91.1	4.39	72.6
42	88.3	87.5	96.2	96.0	91.7	91.1	4.30	76.9
43	87.9	87.5	96.2	96.0	91.3	91.1	4.22	81.2
44	87.5	87.5	96.1	96.0	91.0	91.1	4.13	85.3
45	87.1	87.5	96.1	96.0	90.6	91.1	4.05	89.3
46	86.7	87.5	96.0	96.0	90.3	91.1	3.97	93.3
47	86.3	87.4	95.7	96.0	90.1	91.0	3.87	97.2
48	85.9	87.4	95.5	96.0	89.9	91.0	3.78	101.0
49	85.5	87.3	95.3	96.0	89.7	90.9	3.69	104.6
50	85.1	87.2	95.0	96.0	89.5	90.9	3.60	108.2
51	84.7	87.1	94.7	95.9	89.4	90.8	3.51	111.8
52	84.3	87.0	94.5	95.9	89.2	90.8	3.42	115.2
53	83.9	86.9	94.2	95.8	89.0	90.7	3.33	118.5
54	83.4	86.8	94.0	95.8	88.8	90.7	3.25	121.8
55	82.9	86.7	93.8	95.7	88.4	90.6	3.16	124.9
56	82.4	86.6	93.2	95.7	88.5	90.6	3.06	128.0
57	81.9	86.5	93.0	95.6	88.1	90.5	2.96	130.9
58	81.4	86.4	92.0	95.5	88.5	90.5	2.86	133.8
59	80.9	86.3	91.5	95.4	88.5	90.4	2.76	136.5
60	80.4	86.2	90.3	95.3	89.1	90.4	2.66	139.2
61	79.9	86.1	90.0	95.2	88.8	90.4	2.55	141.7
62	79.4	85.9	89.0	95.1	89.3	90.4	2.44	144.2
63	78.9	85.8	88.5	95.0	89.2	90.3	2.34	146.5
64	78.4	85.7	87.0	94.9	90.2	90.3	2.23	148.7
65	77.9	85.6	87.0	94.7	89.6	90.3	2.13	150.9

## Recommended digestible amino acid levels based on amino acid/lysine ratios

Phase Age (days) (weeks)	Pre-Starter/Starter 0-28 0-4	Grower/Pre-Breeder 29-154 5-22	Breeder 155+ 23+	Male* 155+ 23+
Lysine	100	100	100	100
Methionine	44	45	47	50
M + C	75	85	86	90
Tryptophan	22	25	25	29
Threonine	70	83	75	93
Arginine	105	100	90	100
Valine	67	75	80	75
Isoleucine	70	83	76	83
Leucine	118	130	112	120
Histidine	32	33	34	35
Phenylalanine	65	65	66	65
P + T	115	120	120	120

\* The recommendations for males 155+ days of age can be used if feeding a separate male feed in production is desired. Cobb males will perform well using a normal hen diet throughout their life, thus avoiding the need to formulate a diet specific for males in production.

## Recommended nutrient levels (% per 1000 kcal/kg metabolizable energy)

Phase Age (days) (weeks)	Units	Starter 0-28 0-4		Grower 29-126 5-18		Pre-Breeder** 127-154 19-22		Breeder 1 155-280 23-40		Breeder 2 281+ 41+		Male* 155+ 23+			
		Dig.	Total	Dig.	Total	Dig.	Total	Dig.	Total	Dig.	Total	Dig.	Total		
Crude Protein	%	6.630		5.600		5.590		5.590		5.240		5.240		4.717	
Calcium	%	0.358		0.383		0.524		1.048		1.119		1.119		0.326	
Av. Phosphorus	%	0.160		0.156		0.157		0.157		0.139		0.139		0.163	
Sodium	%	0.067		0.075		0.066		0.066		0.066		0.066		0.069	
Chloride	%	0.067		0.075		0.066		0.066		0.066		0.066		0.069	
Potassium	%	0.215		0.232		0.227		0.227		0.209		0.209		0.218	
Linoleic Acid	%	0.436		0.430		0.419		0.454		0.349		0.349		-	
Amino Acid															
Lysine	%	0.322	0.359	0.190	0.230	0.220	0.260	0.230	0.262	0.225	0.255	0.225	0.255	0.152	0.175
Methionine	%	0.142	0.158	0.086	0.104	0.099	0.117	0.108	0.123	0.106	0.120	0.106	0.120	0.076	0.088
M + C	%	0.242	0.269	0.162	0.196	0.187	0.221	0.198	0.225	0.194	0.219	0.194	0.219	0.137	0.158
Tryptophan	%	0.071	0.079	0.048	0.058	0.055	0.065	0.058	0.066	0.056	0.064	0.056	0.064	0.044	0.051
Threonine	%	0.225	0.251	0.158	0.191	0.183	0.216	0.173	0.199	0.169	0.194	0.169	0.194	0.141	0.165
Arginine	%	0.338	0.377	0.190	0.230	0.220	0.260	0.207	0.236	0.203	0.230	0.203	0.230	0.152	0.175
Valine	%	0.216	0.241	0.143	0.173	0.165	0.195	0.184	0.210	0.180	0.204	0.180	0.204	0.114	0.131
Isoleucine	%	0.225	0.251	0.158	0.191	0.183	0.216	0.175	0.199	0.171	0.194	0.171	0.194	0.126	0.145
Leucine	%	0.380	0.424	0.247	0.299	0.286	0.338	0.258	0.293	0.252	0.286	0.252	0.286	0.182	0.210
Histidine	%	0.103	0.115	0.063	0.076	0.073	0.086	0.078	0.089	0.077	0.087	0.077	0.087	0.053	0.061
Phenylalanine	%	0.209	0.233	0.124	0.150	0.143	0.169	0.152	0.173	0.149	0.168	0.149	0.168	0.099	0.114
P + T	%	0.370	0.413	0.228	0.276	0.264	0.312	0.276	0.314	0.270	0.306	0.270	0.306	0.182	0.210

**Example:** To calculate starter crude protein, assuming a 2860 kcal/kg metabolizable energy diet is 2.860 x 6.630 = 18.96 % crude protein.  
**\*\* The use of a pre-breeder is optional but recommended for those flocks that are underweight or below desired body composition prior to light stimulation. \*** The recommendations for males 155+ days of age can be used if feeding a separate male feed in production if desired. Cobb males will perform well using a normal hen diet throughout their life, thus avoiding the need to formulate a diet specific for males in production.

## Example for a Breeder feeding program based on recommended nutrient levels

Phase Age (days) (weeks)	Units	Pre- Starter*		Starter		Grower		Pre-Breeder**		Breeder 1		Breeder 2		Male	
		0-14 0-2	12.00 2868 1301 20.00	0-28 0-4	11.70 2796 1268 18.54	29-126 5-18	10.80 2581 1171 14.45	127-154 19-22	11.55 2761 1252 15.43	155-280 23-40	11.55 2761 1252 15.43	281+ 41+	11.50 2749 1247 14.40	155+ 23+	11.50 2749 1247 12.97
Metabolizable Energy	MJ/kg kcal/kg kcal/lb														
Crude Protein	%	20.00	18.54	1.00	1.00	0.99	1.45	1.45	2.89	2.89	3.08	3.08	0.90	0.90	
Calcium	%	1.00	1.00	0.45	0.45	0.40	0.43	0.43	0.43	0.43	0.38	0.38	0.45	0.45	
Av. Phosphorus	%	0.45	0.45	0.18-0.20	0.18-0.20	0.18-0.20	0.15-0.20	0.15-0.20	0.15-0.20	0.15-0.20	0.15-0.20	0.15-0.20	0.15-0.20	0.15-0.20	
Sodium***	%	0.18-0.20	0.18-0.20	0.18-0.24	0.18-0.24	0.18-0.24	0.15-0.24	0.15-0.24	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***	%	0.18-0.24	0.18-0.24	0.60	0.60	0.60	0.63	0.63	0.63	0.63	0.57	0.57	0.60	0.60	
Potassium	%	0.60	0.60	1.22	1.22	1.11	1.16	1.16	1.25	1.25	0.96	0.96	-	-	
Limoleic Acid	%	1.25	1.22												
Amino Acid	%	1.12	0.90	1.00	0.90	0.49	0.61	0.72	0.64	0.72	0.62	0.70	0.42	0.48	
Lysine	%	1.12	0.90	1.00	0.90	0.49	0.61	0.72	0.64	0.72	0.62	0.70	0.42	0.48	
Methionine	%	0.49	0.40	0.44	0.44	0.22	0.27	0.32	0.30	0.34	0.29	0.33	0.21	0.24	
M + C	%	0.84	0.68	0.75	0.75	0.42	0.51	0.61	0.55	0.62	0.53	0.60	0.38	0.43	
Tryptophan	%	0.25	0.20	0.22	0.22	0.12	0.15	0.18	0.16	0.18	0.15	0.18	0.12	0.14	
Threonine	%	0.78	0.63	0.70	0.70	0.41	0.49	0.51	0.48	0.55	0.46	0.53	0.39	0.45	
Arginine	%	1.18	0.95	1.05	1.05	0.49	0.59	0.61	0.57	0.65	0.56	0.63	0.42	0.48	
Valine	%	0.75	0.60	0.67	0.67	0.37	0.45	0.54	0.51	0.58	0.49	0.56	0.31	0.36	
Isoleucine	%	0.78	0.63	0.70	0.70	0.41	0.49	0.51	0.48	0.55	0.47	0.53	0.35	0.40	
Leucine	%	1.32	1.06	1.19	1.19	0.64	0.77	0.79	0.71	0.81	0.69	0.79	0.50	0.58	
Histidine	%	0.36	0.29	0.32	0.32	0.16	0.20	0.24	0.22	0.25	0.21	0.24	0.15	0.17	
Phenylalanine	%	0.73	0.58	0.65	0.65	0.32	0.39	0.47	0.42	0.48	0.41	0.46	0.27	0.31	
P + T	%	1.29	1.03	1.15	1.15	0.59	0.71	0.73	0.76	0.87	0.74	0.84	0.50	0.58	

\*The use of a Pre-Starter feed may be necessary if the required bodyweights cannot be achieved with the Starter diet.

In this case, the Starter diet may be used from 15 to 28 days.

\*\*The use of a Pre-Breeder is optional but recommended for those flocks that are underweight or below desired body composition prior to light stimulation.

\*\*\*The concentrations may need to be adjusted depending on individual experiences and local climate.

## Recommended supplementary levels of vitamins and trace elements per metric ton basis

Phase	Unit	Starter	Grower	Pre-Breeder/ Breeder
Age (days) (weeks)		0-28 0-4	29-126 5-18	127+ 19+
Vit. A (Maize Diets)	MIU	10	10	12
Vit. A (Wheat Diets)	MIU	11	11	13
Vit. D3	MIU	3	3	3
Vit. E	KIU	75-80	45-50	50-100
Vit. K	g	3	3	6
Thiamine	g	2	2	2.5-3.5
Riboflavin	g	5-8	5-7	10-16
Pantothenic Acid	g	8-12	8-10	25
Niacin	g	20-40	20-35	40
Pyridoxine	g	3	3	6
Folic Acid	g	1.5	1	4
Vit. B12	mg	25	20	35-40
Biotin (Maize Diets)	mg	250	250	300
Biotin (Wheat Diets)	mg	300	300	375
Vit. C	g	25	25	50
Choline	g	300-350	200-300	250-450
Manganese	g	100	100	120
Zinc	g	100	120	110
Iron	g	20-50	20-50	40-55
Copper	g	10-15	10-15	10-15
Iodine	g	1.5	0.5	2
Selenium	g	0.3	0.3	0.3

MIU = million international units; KIU = thousand international units; g = grams; mg = milligrams  
 Supplementary levels of vitamins and trace elements should always be reviewed to ensure total levels do not exceed those set in local legislation.



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