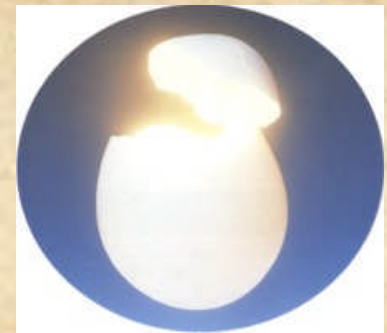


CARIBBEAN POULTRY ASSOCIATION

Caribbean Poultry Industry Integrated improvement Program Table Egg Farm Production Manual Draft August 2004



Objectives

- 📄 To develop a farm management manual, which will be a standard for good husbandry practices for Caribbean table egg farmers inclusive of pullet rearing and egg production.
- 📄 To design the production manual so that it caters for both small and large farmers.

Design Phase

- ☞ The manual was designed around the different stages of growth, development and production.
- ☞ The stages were then integrated to emphasise interdependencies.
- ☞ Factors that were common to all stages were dealt with separately.
- ☞ Data used e.g., light management was selected based on regional relevance.

Table of Contents


 Background 

 Breed & strain selection 

 Growing period management 

 Laying period management 

 Heat stress 

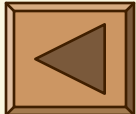
 Water availability & quality

 Summary

Performance Traits differences Brown vs.. White Strains

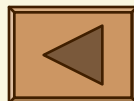
Performance Traits	1979	1996
Egg Production	-8 Eggs	-1 Egg
Feed Conversion	2.8	2.2
BWT. @ 140 Days	+ 400 gm	+200 gm
Sexual Maturity (Days)	+ 4	ND.
Egg Weight (Grams)	+ 3.8	+1.5
Body Weight (Final)	+ 500	+330



Performance data	ISA Brown	Hy-line Brown	Bovan Brown
Percent Peak	95	94-96	93-95
HD Eggs To 74Wks.	335	328	338
Liveability To 80 Wks.	93	96%	94
Days to 50% Lay	140	145	150
Egg Weight @ 32Wks.	62	62.7 gm.	
Egg Weight @ 70 Wks.	65.2	66.9 gm.	63 gm,
Kg Feed Per kg Eggs	2.15	2.06 kg.	2.25
Body Wt. @ 17 Wk.	1.45	1.43 kg.	1.36
Avg. DFI 18-80 Wk.	115	113 gm	114-118

Background

- ☞ The region is 90% self sufficient
- ☞ Per capita consumption; 1 to 2 Eggs per person per week.
- ☞ Main Distribution Channels
- ☞ Grading and Labelling
- ☞ Technology and Productivity Issues



Growing Period Management

Growth Management

Sexual Maturity

Health Management


Body Weight

Lighting Programs

Feed & Nutrition


**Vaccines
Medication**




Week	Day	Type Vaccine	Application
-	1	Marek's (HVT +SB1+Rispens) Intervet	SQ Injectable - Hatchery
-	1	NDV/IBV/IBD (Mass-Conn, B1, D78) Intervet	Spray - Hatchery
-	1	Cocci-Vac D Schering Plough	Spray - Hatchery
2	14	NDV/IBV/IBD (Mass-Conn, B1, D78 ¹) Intervet	Coarse Spray
4	28	Fowl Pox, D78 ¹	Wing Web, Coarse Spray
8	56	NDV/IBV (Mass-Conn, B1)	Coarse Spray
11	77	Coryza	SQ Injectable
16	112	NDV/IBV (Mass-Conn, B1)	Coarse Spray 

Cardinal Rules

- Start pullets with a maximum of 48 Hours continuous light.
- Never increase day length between 8 and 14 weeks. ▶
- Never increase day length when body weight is below the strain recommendations.
- 1400 gm. For ISA Brown, 1500 gm for Hy-Line Brown.
- Never decrease day length at start of lay.

 AGE	LIGHT DURATION
1 - 7	24 h ¹
8 - 14	22 h
15 - 21	20 h
22 - 28	19 h
29 - 35	18 h
36 - 42	17 h
43 - 49	16 h
50 - 56	15 h
57 - 63	14 h
64 - 105	14 h
106 - 112	15
113 - 119	16
120 - 126	16
At 50% lay	MNF ²
At Peak	MNF

Nutrients Summary 	Starter Nutrient Profile	Grower Nutrient Profile	Developer Nutrient Profile	Prelay Nutrient Profile
Metabolisable Energy kcal/kg ²	2950	2850	2700	2750
Crude Protein %	20	19	16	17
Methionine	0.52	0.45	0.33	0.36
Methionine & Cystine	0.85	0.76	0.58	0.65
Lysine	1.15	0.98	0.72	0.75
Threonine	0.73	0.65	0.5	0.53
Tryptophan	0.21	0.19	0.17	0.17
Calcium	1.05-1.1	1.0-1.1	0.9-1.1	2-2.1 ¹
Available Phosphorus	0.48	0.42	0.36	0.45

The Production Phase

Laying Period Management

Transition Mgmt.

Pre-Peak Mgmt.

Post-Peak Mgmt.

Feeding Program

Phase Feeding

Egg Size Mgmt

Egg Shell Quality

Lighting Program

Culling

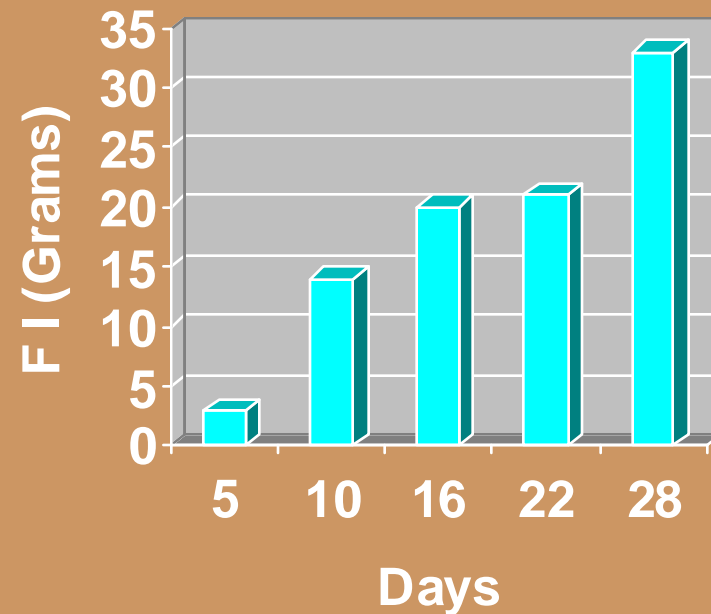
Transition Management

- ☞ Take steps to reduce stress
- ☞ Monitor Live weight loss
- ☞ Transfer at night or during the coolest part of the day
- ☞ Monitor water availability and water temperature
- ☞ Monitor feed intake ▶

Monitor Feed Intake

- Continued Live weight gain essential
- Increase in FI should be 35 – 40 % (Between 5% and Peak production)

Changes in FI in early Production



Management To Peak Production

Between Transfer & 28 Weeks.

Mgmt. Guidelines

Encourage Growth

Start with good POL Birds
Minimise stress at transfer
Minimise Heat Stress

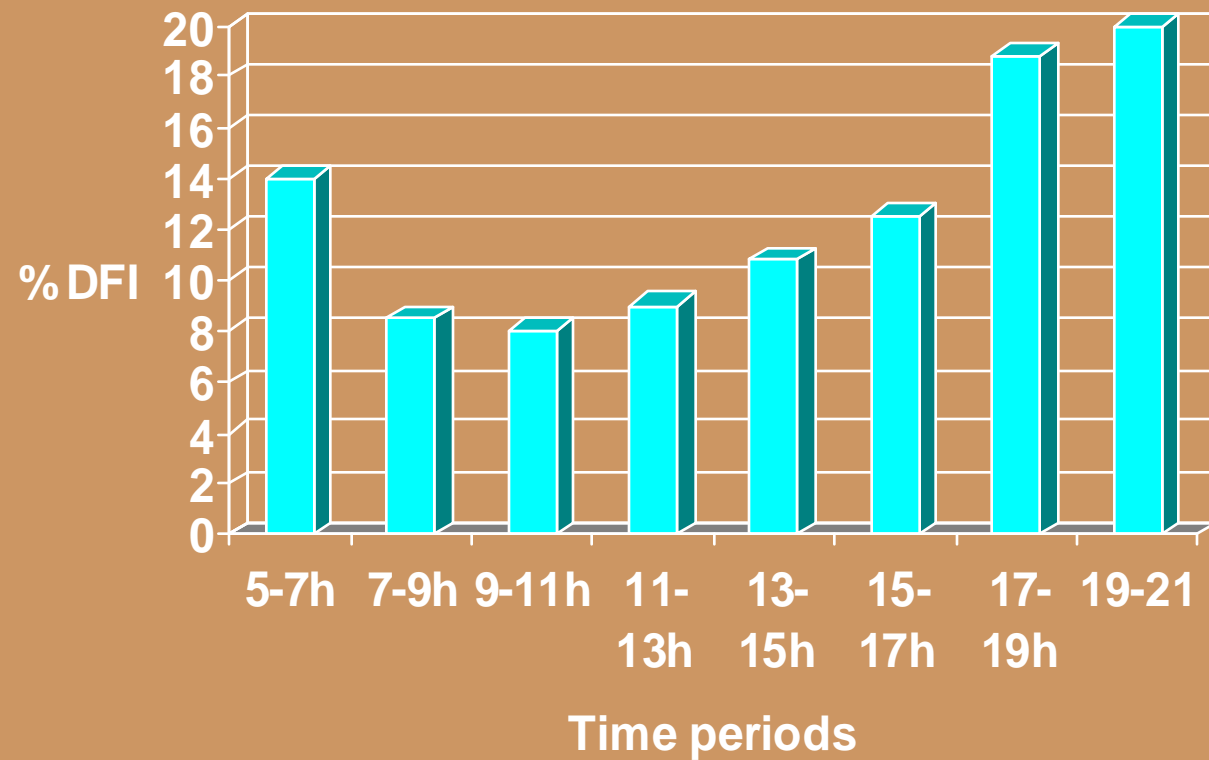
Encourage Feed Consumption

Use Feed of good Texture
Timing of Feeding

Obtain correct egg weight.

15 – 16 Hrs. Light
Monitor Growth
Use a 18% Protein Feed

BI-Hourly FI in % of DFI





Nutrient Composition

Nutrients	Levels (19-30 Weeks..)	
Energy (Kcal)	2800-2850	
Protein	18.6	%
Methionine	0.41	%
Lysine	0.86	%
Tryptophan	0.19	%
Calcium	3.7-3.9	%
Available Phosphorus	0.45	%
Linoleic Acid	1.1	%
Vegetable oil	1	%

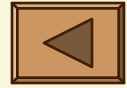
Pre Peak Egg Size Management Summary.

- ☞ Influenced by sexually mature body wt.
- ☞ Increased by delayed light stimulation.
- ☞ Mean egg wt. Increases by 1 gram when sexual maturity is delayed by 1 wk.
- ☞ Provide 15 – 16 hrs. Light (never decrease light).
- ☞ Institute mid night feeding.
- ☞ Nutrition: intake of nutrients e.g., Amino acids, energy, total fat and fatty acids (Linoleic).

Post Peak Production

To Achieve:	Management Methods
High persistency post peak	Ensure proper levels of nutrients especially amino acids 
Liveability	Transfer pullets before sexual maturity. Use correct intensity and spectrum of light
Excellent shell quality	Encourage calcium intake and medullary bone reserve before egg production, use MNF 

Post Peak Layer feeds




Nutrients	Layer 2 (31-50W)	Layer 3 (50-65W)	Layer 4 (65-85W)
Energy (Kcal)	2750-	2730-2760	2730-2760
Protein %	28.00 17.5	17.0	16
Methionine.	0.39	0.38	0.37
% Lysine	0.84	0.80	0.77
% Tryptophan	0.18	0.18	0.17
% Calcium	4.0-4.1	4.2	4.4
Available Phosphorus %	0.40	0.38	0.36
Linoleic Acid	1.1 min	1.6 Max	1.6
% Vegetable Oil (minimum)	0.5	0.5	0.5

Effect of Calcium Particle size on egg shell quality

Particle Size	Egg Shell weight in % of pre-experimental Period
Powder (0-0.7 mm.)	96.1 %
Particles (1-2 mm.)	97.4 %
Particles (2.4 mm)	101.9 %

Other factors affecting Shell quality

 Bird Physiology

 Equipment maintenance

 Lack of cage maintenance

 Improper ratio of birds:Nest box (Floor Eggs)

 Poorly designed nest boxes

 Poorly adjusted conveyors

 Health status of birds (IB, EDS)

 Ambient temperature > 28 Degree. C

 Age of Hen (Impaired Liver function)



Managing Heat stress

Increasing water availability 

Reducing water temperature

Postpone husbandry that requires bird handling

Use vitamin and electrolyte supplements

Increase air movement in the house

Avoid overstocking cages during the summer months

Increase feed nutrient density

Implement MNF

House design

Effect of Ambient Temperature on Water consumption

