Centurion Poultry, Inc.

DEKALB WHITE

MANAGEMENT GUIDE

North American Edition

2008 Edition

www.centurionpoultry.com

Centurion Poultry, Inc. (CPI) is a family owned Company, specialized in the production and marketing of a variety of different egg layer strains, each serving a specific market need.

The Company was founded in 1991 and is headquartered in Lexington, Georgia with satellite operations is Alabama, Iowa, Missouri, Pennsylvania and Wisconsin.

CPI produces Parent Stock chicks, Commercial Chicks and hatching eggs for the US market and beyond.

We are proud to present you the 2008 North American edition of the DEKALB WHITE Management guide for commercial layers. We have updated all our management and production targets based on the latest field testing and – results. For further questions or assistance please contact your nearest Centurion Sales & Service representative or send an e-mail to info@centurionpoultry.com and we will direct you to one of our staff members who can handle your questions best.

For more information about our products, services and distribution network, please visit us at our website at www.centurionpoultry.com

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BROODING AND REARING PERIOD

Well managed brooding and grow out periods will help build a strong, healthy bird capable of meeting or exceeding expectations for performance. All targeted recommendations are to be used as a guide to assist in achieving these goals. The following recommendations have been developed through research, field experience, and currently accepted field practices.

Brooding Temperatures and Space Requirements for Growing Period

Age in Weeks				1	2	3	4	5-17
Temperature [1]			°F	90-85[2]	85-80	80-75	75-70	70
			°C	32-29[2]	29-27	27-24	24-21	21
Floor Space		Cage	Sq. in/ Bird	24				48
			Sq. cm/ Bird	155				310
		Floor	Sq. ft/ Bird	0.5				1.0
			Birds/ Sq. m	20				10
Feeder Space	Trough	Cage	In./ Bird	1.0				2.0
			Cm./ Bird	2.5				5.0
		Floor	In./ Bird	1.5				3.0
			Cm./ Bird	4.0				7.5
	Pans	Cage	Birds/ Pan	24				12
		Floor	Birds/ Pan	50				25
Drinker Space	Cups or Nipples	Cage	Birds/ unit	16				8
		Floor	Birds/ unit	24				12
	Founts/ Bells	Floor	Birds/ unit	150				100
	Trough	Floor	In./ Bird	0.6				1.0
			Cm./ Bird	1.5				2.5

Note: 1) Brooding temperatures are at chick level, not caretaker's eye level!
2) Start off at 90F/32C down to 85F/29C by day 7.

Goals

The rearing period (0-17 weeks) is, by far, the most critical time in the life of a laying chicken. During this time period, the development that occurs structures the physical as well as the physiological foundation for the productive life of the hen. Errors made during this time are very difficult to overcome. One should strive to achieve the target body weight with good uniformity in a properly vaccinated flock. To assist in reaching these goals, the following recommendations have been developed through research, field experience, and currently accepted field practices.

Isolation and Sanitation

The most effective way to reduce the negative impact of disease causing pathogens on the growth and subsequent performance of a flock is to avoid exposure to these organisms. A sound sanitation program and effective isolation plans are instrumental in achieving this goal.

Sanitation should begin with removal of all organic matter from the previous flock. Organic matter includes live and dead chickens, rodents, manure, feathers, etc. Growing birds on built-up litter is not recommended at any time. Dry cleaning should be done as soon as possible after the old flock is removed. The dry cleaning should include the walls, rafters, ceiling, feed bins and other feed equipment, fans, vents, watering system, cages, etc. After dry cleaning has been completed, all surfaces should be washed with high-pressure washing and an approved surfactant containing detergent. Following this wash down, apply a sanitizing agent approved for use in poultry houses. The sanitizing agent chosen should be broad spectrum in its activity and used according to manufacturer's directions. If allowed, fumigation of the house using an approved fumigant can also be used after returning all equipment to the house. Prior to returning equipment to the house, it should have been cleaned and disinfected. After the cleaning and disinfection is complete, it is recommended to have "down time" scheduled to allow for pathogen die off.

Isolation of the house is vitally important to reduce the possibility of introducing a disease organism into a clean house environment. People traffic constitutes the largest threat to isolation and introduction of disease causing agents. Ideally, shower facilities and farm clothing are available for all employees and necessary visitors. If this is not possible, farm workers should be provided footwear and clothing that is worn only on the farm and visitors should be limited to those that are necessary and they should be required to wear clean coveralls, new plastic or cleaned rubber boots, and hair covering. Disinfectant footbaths should be present at the entranceway to each house and should be replenished with fresh disinfectant daily. Doors should be kept locked at all times to prevent unwanted, improperly attired visitors from entering. "No Trespassing" signs should be prominently displayed on the doors and "Bio-security Zone" signs should be displayed at the farm entrance to warn visitors that they are entering a bio-secure area. Remembering that people spread many diseases from farm to farm will help to encourage less people traffic to and from farms.

Prior to Chick Arrival

1. All equipment, including cages, brooders, interior surfaces of the building, and any other equipment used should be thoroughly cleaned and disinfected.

2. All mechanical equipment, feeders, fans, curtains, etc. should be tested and brought into good working condition.

3. Rodent control programs should be strictly enforced when the house is cleaned and empty. The use of baits, tracking powders, and any other control method available should be implemented.

4. Feed from previous flock should be removed and the feed bins, troughs, hoppers, and chains or augers cleaned and dried before the delivery of new feed.

5. Raise the house temperature to 85-90 °F (29-32 °C) at least 24 hours prior to chick arrival to ensure the equipment is also warm. The desired relative humidity should be greater than 60%. This humidity level should be maintained for at least three weeks.

6. Start with a light intensity as high as possible. Set light clocks to 23 hours day length. If shadows are being cast onto any drinkers/nipples, the use of droplights is suggested to eliminate these shadows.

7. Trigger nipples to ensure that they are in working order and set at the proper height. Nipples should be at the chick's eye level and bell drinkers should be on the floor. Supplemental drinkers should be used in floor brooding and removed slowly once the chicks are established and are clearly using the main drinking system.

Delivery Day

1. Encourage the chicks to drink as soon after delivery as possible.

2. Watch chicks for signs of overheating (panting and listlessness) or chilling (huddling and chirping). Adjust temperatures as needed. Remember that chicks that have traveled long distances are thirstier and will drink more water in a short period of time. This will lower the body temperature of the chick and could result in chilling of the chick. Slightly higher house temperatures may be necessary under these circumstances.

3. Use minimum ventilation rates to ensure fresh air and the dilution of pathogens.

Floor Brooding

Brooding chicks on the floor is becoming more common for raising layers going into a specialty egg program. Follow the temperature recommendations on page 3 for space heated buildings. When brooders are used instead, somewhat lower ambient temperatures are acceptable, but temperatures right under the brooders should be higher. Start with 92-94 °F (33-35 °C) when the chicks arrive. Depending on the BTU's each brooder can handle up to 3000 chicks. Follow manufacturer's recommendations. Observe the chicks for comfort in the brooder area. If they are cool, they will huddle under the brooder stove. If they are hot they will try to get as far away from the stove as possible. When comfortable, the chicks will be dispersed throughout the brooder ring area. Drafts should be eliminated to prevent piling and chilling of the chicks. When brooders are used, always start the chicks off with a brooder guard around the brooder to contain the chicks. The circle can be gradually enlarged when chicks get older. Depending on ambient temperatures, brooder guard can be removed when the chicks are 7-15 days old.

Beak Treatment

It is preferred that all pullets are beak treated to ensure better livability, less feather pulling, and better feed conversion. There are many different beak-treatment programs that are used successfully throughout the world. The following are examples of programs proven to work well on the DEKALB WHITE layers.

1) Single beak treatment, by laser, at the hatchery. This procedure is gaining popularity. If a second treatment is needed, the advantages of this early treatment are reduced. This program works well for flocks grown with good light control and excellent management. Generally, it is not recommended as the only treatment for cage free production.

2) Single beak treatment at 10-14 days (later is better). This is commonly used and works very well as a single beak-treatment for the DEKALB WHITE. Provided it is done well and the flock is placed in a light controlled cage facility, no second treatment should be needed.

3) Single beak treatment at 5 – 7 weeks. This program is commonly used too in areas where pullets are raised in light-controlled environments and destined for a layer facility with little light control or very high light intensity. This later treatment reduces the potential for cannibalism in high light intensity environments and floor operations.

4) Double beak treatment. This program is recommended for use by some producers especially organic producers, who need an early beak treatment to prevent toe pecking and the early beak treatment is not adequate for their layer environment, i.e. expect more stress conditions in the lay period (high light intensity environments or open sided houses or management challenges).

To reduce the bleeding associated with treatment of the beaks, withdraw feed from the pullets 12 hours prior to treatment and give the birds Vitamin K in the water two days before and two days after treatment. Be certain to raise the depth of the feed available to the chicks after treatment to reduce the injury of the beak from hitting metal chains or augers.

Up to 14 days of age, a Precision beak treatment device with the guide plate holes of 4.3, 4.7, and 5.0 mm, can be used. Treat the beaks 2-mm from the nostril for the early treatment. The beak length should be 4 mm for the treatment that occur after 2 weeks of age. A blade temperature of 1,300 °F (between 700- 800 °C) and a cam speed of 2 seconds should provide optimum results. Avoid beak treatment of pullets which are sick or under severe stress.

Vaccination and Disease Control

The best method of disease control was discussed above in the Isolation and Sanitation section. Ideally, eliminating the exposure to a disease-causing agent can prevent diseases. Since it is know that preventing the exposure of birds to certain disease agents is virtually impossible or highly unlikely, we must use a vaccination program that will provide protection against the disease to which exposure is likely. The diseases to which flocks may be exposed vary throughout the world and therefore you should consult with a veterinary professional familiar with the particular disease exposure conditions in your locality.

In most of the world, Marek's Disease, Newcastle Disease, Infectious Bronchitis, Infectious Bursal Disease, Fowl Pox, Laryngotracheitis and Avian Encephalomyelitis are widespread, and require routine vaccination. The following is a typical vaccination program:

1 day (In hatchery)	Marek's Disease	SubQ or IM Injection
18 days	Newcastle/Bronchitis	Water
	Infectious Bursal Disease	Water
28 days	Infectious Bursal Disease	Water
35 days	Newcastle/Bronchitis	Water or Spray
56-70 days	Newcastle/Bronchitis	Water or Spray
	AE/Fowl Pox	Wing Web
	Laryngotracheitis	Eyedrop
91-98 days	Newcastle/Bronchitis	Spray or Inject

This is a sample vaccination program and is not intended to replace current vaccination programs being used successfully. Contact your local Centurion sales/service person for more information or assistance in developing a vaccination program for your particular flock. Birds that are sick or under stress should not be vaccinated. Since vaccines vary in pathogenicity, route of administration, and timing of administration, be certain to refer to manufacturer recommendations prior to using any vaccine or designing a vaccination program.

FEEDING THE DEKALB WHITE PULLET

The goal of managing the DEKALB WHITE is to attain the greatest number of eggs in the desired weight range at the most efficient cost per dozen or per pound of egg mass. To attain this goal, birds should be fed correctly during both the growing and egg production phases.

The DEKALB WHITE should be started and maintained on a feed program that provides all the known required nutrients for growth and sexual development. The objective is to be certain that the pullet reaches the target body weight during each week of growth. Uniformity of body weight is also critical to achieving the goals of efficient and high production. The rations used must be adequate to achieve the targeted body weights and uniformity under normal environmental conditions. Should over-crowding, disease challenges, high temperatures, poor ventilation, etc., stress the birds, a denser ration may be required to attain the desired results. Always keep your nutritionist or feed company informed of these stresses and the flock's feed consumption level so that appropriate adjustments can be made to the formulas.

The feeds used should contain all the essential amino acids, vitamins, energy, and other non-energy nutrients. Body weight measurements of the pullets should be taken beginning at 4 weeks of age and taken every week thereafter up to peak production, then every other week until peak egg mass is achieved. The recommended ration for the first six weeks of the birds' life is a Starter ration (See table on page 9). If at the end of six weeks of age, the birds are at the target body weight (410 grams or 0.90 lbs.), the ration can be changed to a Grower ration. If, however, the body weights are low, the flock should remain on a starter ration until the 6-week target body weight is attained.

The Grower ration is designed to be fed from 7 to 10 weeks of age. If the flock has continued to grow normally and has reached target body weights, with good uniformity, the flock should be moved to a Developer I ration at 11 weeks of age.

The Developer ration is designed to allow for the rapid body weight growth that occurs at this age. If the flock is not achieving the targets for body weights, adjustments should be made in the nutrient levels of the feed to achieve these goals. This is why monitoring of a flock's body weight is very important. At 16 weeks of age change birds to developer II ration if body weight is on target. This diet has higher Calcium levels that will allow for the development of the meduallary bone that acts as a reservoir for calcium for eggshell formation. Ensure the birds are fed peak rations at the onset of production. Contrary to popular belief, it is not recommended to wait until 5% production before feeding a layer ration.

All pullet feeds should be fed ad libitum or without restrictions. If body weights are below target due to too low feed intake as a result of hot weather, an additional feeding during the dark period can be given. This is commonly referred to as a midnight feeding. Turn the lights on for about 45 minutes during which time the feeding system is activated. The midnight feeding has to be stopped once bodyweight and/or feed intake turns back to normal. If body weights are significantly above the target, the use of fewer feedings and warmer house temperatures will help slow the body weight gains, but be certain to watch uniformity closely. A successful growing program not only entails good housing, management, and good nutrition, but also good feeding management. To ensure the pullets eat a balanced diet, it is important that the finer feed particles also be eaten. To be certain that this occurs, the feeding program should be designed to make sure that the feeders are emptied each day. This is normally achieved by running the feeders in the mornings and in the late afternoons and evenings while allowing the feeders to be eaten empty during the middle part of the day. This program should be applied to both pullets and layers.

Body Weight Uniformity

The goal for flock uniformity is that at least 80% of the birds should be within 10% above or below the average body weight for that flock. For example, you weigh 115 birds individually. This should be done using a scale that is in increments of no more than 50 grams (Preferably 20-25 grams). The average weight is 1050 grams for the birds weighed. Thus the 10% cutoff above and below target includes the birds that weigh between 945 grams and 1155 grams. If 95 birds weighed between these limits, the uniformity of the flock would be about 83%. Although good uniformity in no way guarantees good layer performance, it does indicate that the pullet-growing program is adequate.

Water

An adequate supply of clean potable water is essential for the flock. Water is the most essential nutrient provided to the flock and should not be ignored or taken for granted. Water testing should be performed to ensure that the water supply is clean prior to placing the flock. Always be certain that an adequate volume of water is available to all birds in times of peak water demand.

MOVING TO THE LAYING HOUSE

Pullets that are ready to be moved should be without feed for approximately 6 to 12 hours prior to loading. This practice will provide cleaner layers going into the lay house and will also ease the transition to new equipment by making the birds more eager for feed and water. For flocks that will be in transit for longer distance, the feed withdrawal period prior to loading can be reduced. Best results will be attained when the pullets are moved at 17 weeks of age. Due to the potential body weight loss associated with moving, body weights taken immediately after moving should not be considered an accurate reflection of the pullet flock's condition.

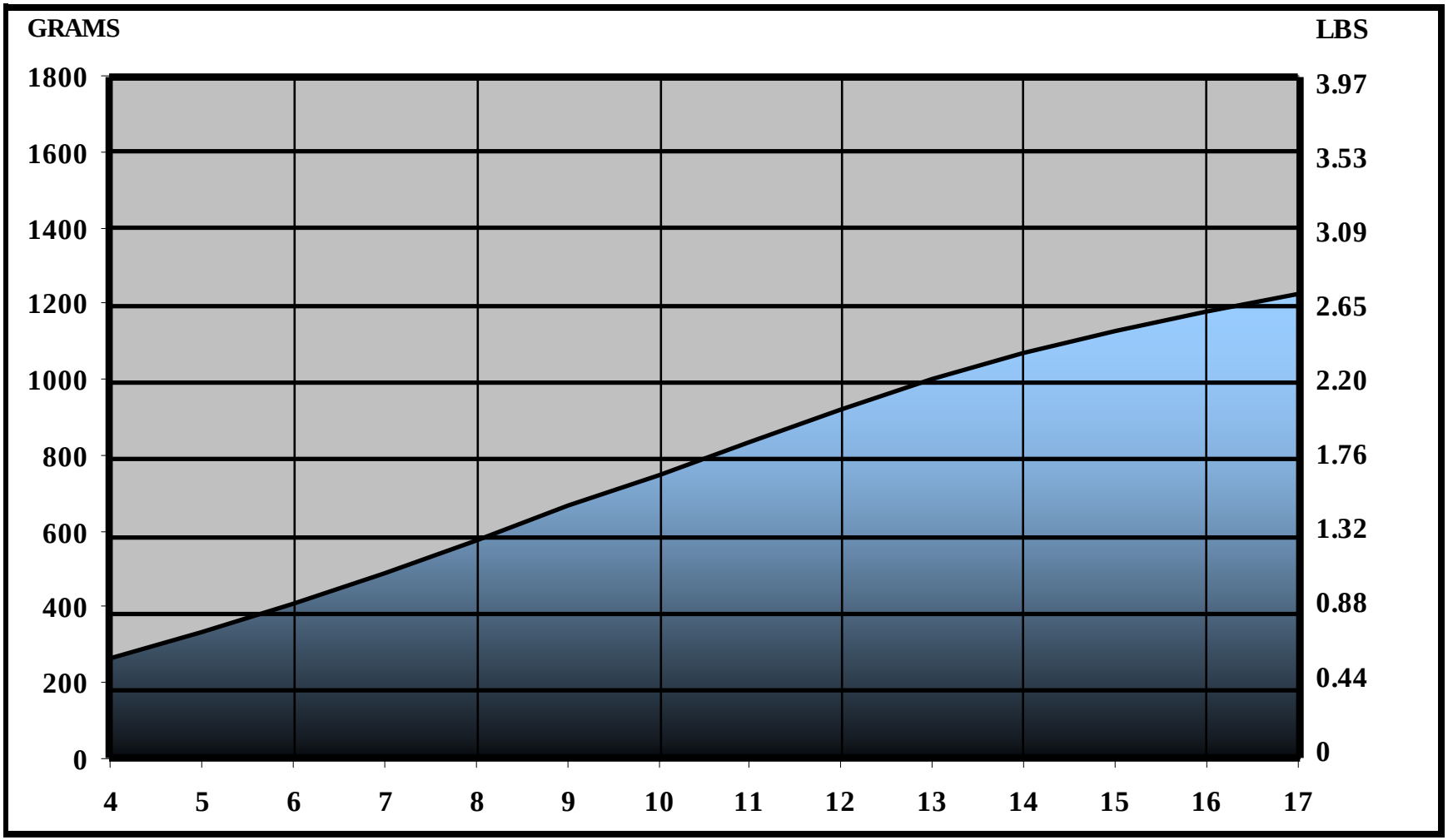
The laying house should be cleaned and disinfected and water lines sanitized prior to moving in the new flock. Vitamins and electrolytes are often used to reduce the stress associated with the move. The birds should be handled as gently as practical to prevent broken bones and rupture of yolks inside the birds' abdomens. Light intensity should be kept high for the first few days after housing to ensure that the flock can find feed and water. Reduce the intensity to the recommended level once the birds are on feed and water and follow the recommended lighting and feeding program.

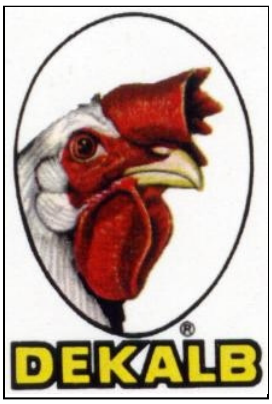
RECOMMENDED PULLET FEEDING PROGRAM

	Starter (0-6 weeks)	Grower (7-10 weeks)	Developer I (11-15 weeks)	Developer II* (16-17 weeks)
Crude Protein (%)	20	18	16	15
ME (Kcal/lb.)	1360	1350	1345	1330
ME (kcal/kg)	2990	2970	2959	2926
Linoleic Acid %	1.30	1.30	1.30	1.20
Methionine %	0.45	0.40	0.36	0.36
M + C %	0.80	0.72	0.65	0.63
Lysine %	1.10	1.00	0.88	0.80
Arginine %	1.20	1.10	1.00	0.95
Tryptophan %	0.21	0.19	0.17	0.16
Threonine %	0.75	0.70	0.60	0.55
Calcium %	1.00	1.00	1.00	2.75
Av. Phosphorus %	0.50	0.50	0.45	0.45
Sodium (%)	0.18	0.17	0.17	0.18

* Note: The Developer II diet should be discontinued and a layer ration used at the onset of production.

DEKALB WHITE PULLET BODY WEIGHT GRAPH





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"Home of the bottom line birds"

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