



# Feeding and Management of Grower Chicken

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# Outline

- 1. Objective of Raising Grower Chicken**
- 2. Physiological Characteristics of Grower Chicken**
- 3. Key Points of Feeding and Management of Grower Chicken**
- 4. Other Feeding and Management**



# I. Objectives of Raising Grower Chicken

- **Grower chicken, 7 wks to before laying (18 weeks)**
- **Objectives**
  - **Develop normally and keep high survival rate;**
  - **Keep high uniformity;**
  - **Start egg-laying at the right time.**



## ➤ **Bodyweight and tibia length up to standard**

- **For chicken flock with standard tibia length and light bodyweight, the egg weight was small and the laying rate increased slowly in the early laying period.**
- **Chickens with short tibia length and overweight are easy to lay eggs early, with serious rectocele and high death rate.**
- **If the tibia length and body weight are not up to the standard, the first egg-laying will be delayed, at least 1 to 2 weeks, at most 3 to 4 weeks, and the laying peak will not reach the standard.**



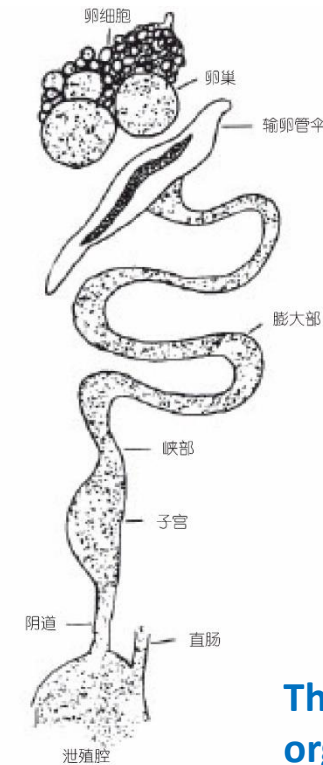
## ➤ Restricted feeding at late growing period

- In the late growing period, **abdominal fat** increased rapidly, the body fat deposition was negatively correlated with production performance, the feed energy levels should not be too high;
- In winter, when chicken appetite is good, the feed intake should be controlled to avoid excessive fat deposition and affect production performance.



## ➤ Normal development of the reproductive system

- The reproductive system of laying hens begins to develop at about 80 days of age, enters a rapid development period at about 100 days of age, so it is necessary to pay attention to the usual nutrition.
- The reproductive tract of layer is vulnerable to escherichia coli and Salmonella, so it is necessary to prevent salpingitis and ensure the healthy development of the reproductive system.



The reproductive organs of layers

图1 母鸡的繁殖器官

## ➤ Get ready for prenatal period

- Before laying eggs, chickens should be dewormed to prevent and control coccidiosis, tapeworms and other parasites.
- During the growing period, chickens undergo various stresses, such as group transfer, epidemic prevention, feed changes. Attention should be paid to the use of reasonable time and methods to minimize the stress of the chicken.
- Take regular supplements of cod liver oil and vitamins to reduce stress in chickens



## 2. Physiological Characteristics of Growing Chickens

### 2.1 Body temperature regulation function is sound, vitality is strong.

- From birth to the start of egg production, the chicken usually moults 4 times: 4-5 weeks, 7-8 weeks, 12-13 weeks, 18-20 weeks
- Digestive function is sound, feed intake gradually increased.



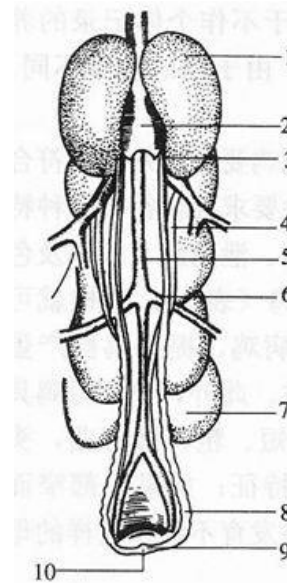
## 2.2 Bones and muscles are in their prime.

- Rapid growth of bone and muscle;
- Fat deposition is accelerated in late period.

## 2.3 Rapid development of gonads.

- After 10 weeks of age, the follicles on the hen ovary begin to accumulate yolk.
- After 12 weeks of age, the rooster develops rapidly and begins to produce sperm.

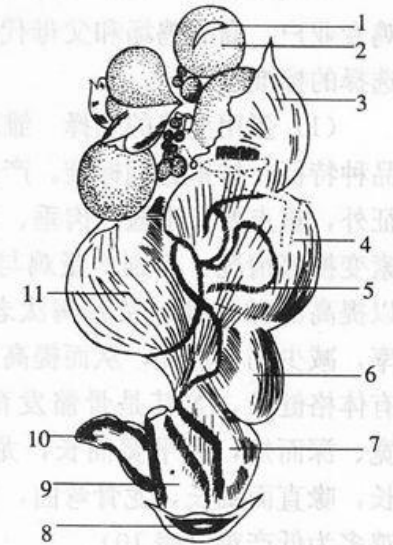
Reproductive  
organ of rooster



公鸡生殖器官

1. 睾丸 2. 睾丸系膜  
3. 附睾 4. 输尿管 5. 主  
动脉 6. 输精管 7. 肾  
8. 泄殖腔 9. 八字皱襞  
10. 生殖突起

Reproductive  
organ of hen



母鸡生殖器官

1. 卵带 2. 卵泡 3. 漏斗部 4. 膨  
大部 5. 峡部 6. 子宫 7. 阴道  
8. 泄殖腔 9. 直肠 10. 右侧退化  
的输卵管 11. 有蛋的膨大部

**Table 1 Recommended body weight and daily feed intake  
of Beijing You Chicken in growing period**

Week-age	Average body weight (g)		Feed intake (g)			
	Rooster	Hen	Rooster		Hen	
			g/d	Cumulative/ (G)	g/d	Cumulative/ (G)
7	665	560	55	1624	51	1477
8	810	665	62	2058	57	1876
9	980	765	68	2534	63	2317
10	1170	865	71	3031	67	2786
11	1310	960	76	3563	70	3276
12	1410	1050	79	4116	71	3773
13	1510	1140	81	4683	72	4277
14	1595	1225	85	5278	73	4788
15	1675	1300	88	5894	75	5313
16	1750	1360	92	6538	77	5852
17	1820	1410	97	7217	79	6405
18	1885	1455	102	7931	81	6972

# **3. Key Points of Feeding and Management of Grower Chicken**

## **3. 1 Timely transfer**

- **The chickens need to be transferred from the brooding house to the growing house. The house and equipment shall be cleaned and disinfected before transfer.**
- **Carry out high-pressure cleaning indoors, spray or soak the ground with 10% -20% lime solution, and clean the ground with water after drying.**
- **Drain the water in the drinking water line, add acetic acid with a concentration of 10% -20% to soak, drain and wash before the brooder chickens enter the house.**
- **Use disinfectant to disinfect and clean drinking fountains.**
- **Adjust the height of the drinking water line;**
- **The floor of the flat house is made of straw or coarse grain husk, about 5 cm, and slightly thicker in winter.**

- In winter, the temperature of the growing house should reach the temperature of the brooder house at that time.
- Stop feeding 5-6 hours before transfer to reduce the excretion of chickens during transportation, and feed the chickens as soon as possible after transfer to new house.
- Night transfer is more suitable and can reduce disability in flocks while facilitating the separation of different developing flocks.
- Handle the chicken gently so as not to break the bones.
- Electrolyte multivitamin were added to chicken drinking water before and after transfer.



## **2. Gradually stopping the heating (no heating)**

**There is a gradual cooling process in the late period of brooding.**

**Heat stop time: 6 -7 weeks. If the ambient temperature is high at that time, the chicken house can reach 21-24 °C without heating, and it can be removed at 5 weeks of age. If the indoor temperature is below 18 °C, it can be removed after 7 weeks of age.**

**Stop heat should be carried out step by step, and the temperature should not suddenly cool down.**

### 3. Reasonable stocking density

- In order to prevent the later obesity, it is necessary to adopt restricted feeding;
- It is necessary to have a reasonable stocking density, sufficient feeding and drinking space, so that the growth and development of chickens can be normal and show a high degree of uniformity.



**Table 1 Recommended stocking density**

<b>Raising system</b>	<b>1-6w (chicken/m<sup>2</sup>)</b>	<b>7-18w (chicken/m<sup>2</sup>)</b>	<b>19w - Culling (chicken/m<sup>2</sup>)</b>
<b>Caged</b>	<b>≤38</b>	<b>≤20</b>	<b>≤17</b>
<b>Net Flat Raising</b>	<b>≤25</b>	<b>≤10</b>	<b>≤7</b>
<b>Ground Level Raising</b>	<b>≤25</b>	<b>≤8</b>	<b>≤6</b>
<b>Free range</b>	<b>-</b>	<b>Inside the house ≤ 10 chicken/m<sup>2</sup>, Outside the house ≥ 4 m<sup>2</sup>/chicken</b>	<b>Inside the house ≤ 6 chicken/m<sup>2</sup>, Outside the house ≥ 4 m<sup>2</sup>/chicken</b>

**Note: The stocking density in woodland free range should be kept above 4m<sup>2</sup>/ chicken.**

## 4. Sampling and weighing of chicken

- Insist on sampling and weighing of chickens once a week at the weekend, compare the actual average weight with the standard weight, so as to adjust the feeding method in time.
- The number of chickens sampled and weighed should exceed 5% of the total population.
- In the late period, individuals who are too fat or too thin or too weak need to be weeded out.



## **5. Moderate feeding restriction**

- **Free feeding of growing chickens tends to be overfeed in late period, resulting in excessive body weight and fat, affecting the later production performance.**
- **Reduce the supply of feed and pay attention to the proper combination of feed, such as limiting energy and protein levels.**



## ➤ **Restricted feeding methods**

- **Weekly feeding restriction, i.e. stop feeding for one or two days a week;**
- **According to the feeding time limit, generally feeding two days of feed within one day;**
- **Feeding restriction can generally reduce feed intake to 90% of the original level, but the weekly weight gain should not be below standard body weight.**
- **According to the different feed quality, use the feeds with low energy, low protein content and low amino acid content.**

- **Restricted feeding is generally performed between 8-10 weeks of age and 17-18 weeks of age;**
- **Adequate water troughs and water drinkers shall be provided during feed restriction.**
- **If vaccination or disease occurs during the feeding restriction period, the feeding restriction should be stopped immediately to avoid affecting the growth and development of the chicken.**
- **In order to monitor the results of feeding constriction, the weight of chickens should be sampled every week, and then the diet proportion should be adjusted reasonably.**



## **6. Keep in small groups**

- Under flat raising, the group size does not exceed 800.
- Weak chickens tend to occur in large flocks, and can affect the evenness.
- Chickens of different ages should not mix;
- Male are separated from female;
- The hens are separated from the chicks.



## **7. Pay attention to the evenness of chickens**

**The evenness is an important factor affecting the quality of chickens during the growth and development and the future laying performance.**

**Evenness reflects the uniformity of individual body weight in the flock, and is the key factor to determine future laying rate and length of the peak egg production.**

**Large groups are sampled at 1%, small groups are sampled at 5%, but not less than 30-50 birds.**

**The larger the value of uniformity, the better the flock uniformity.**

$$\text{Uniformity} = \frac{(X + X \times 10\%) \text{ Number of chickens}}{\text{Total number of chickens}} \times 100$$

X = average body weight

## ➤ Reasons for poor evenness

- Improper beak trimming affects the feeding of chickens and the uniformity of flocks.
- Poor environmental control;
- Uneven feeding or uneven mixing of feed;
- High stocking density;
- Transfer stress;
- Diseases.



## ➤ Method for controlling uniformity of chicken flock

- Weigh and measure the uniformity regularly.
- Chickens with different body weight were fed with different diets.
- Chickens were selected weekly to adjust the uniformity of the flock.
- Chicken selection is a remedy once the uniformity is low.



- There was a moderate correlation between **body weight uniformity at 16 weeks** of age and duration of egg production.
- Evaluation of flock uniformity:

<b>80-85%</b>	<b>qualified flocks</b>
<b>85-90%</b>	<b>good flocks</b>
<b>More than 90%</b>	<b>excellent flocks</b>

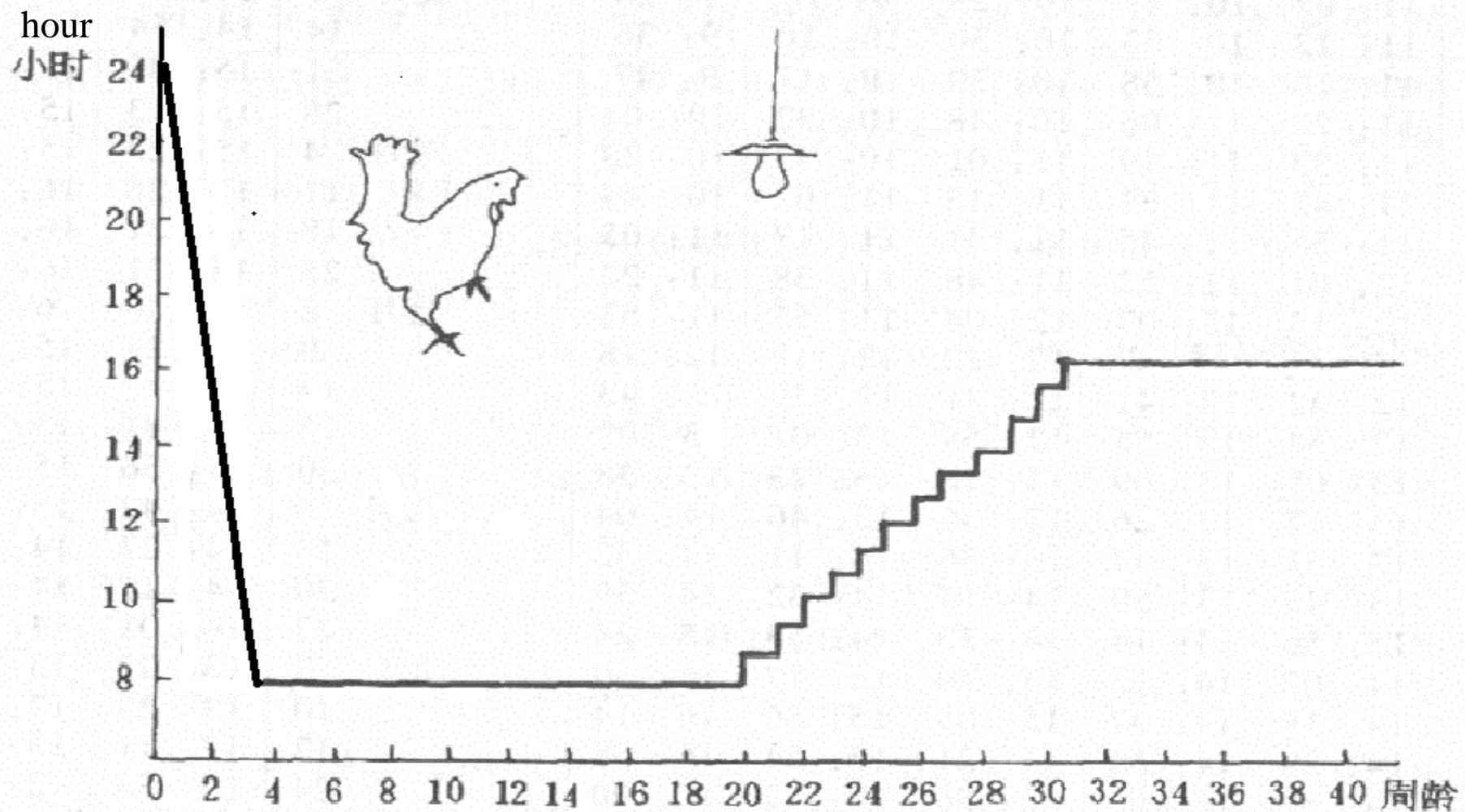


## **8. Lighting**

- **Light has a great impact on grower chickens.**
- **Natural lighting is used when the natural light diminishes, and artificial lighting is not needed.**
- **Use constant lighting when the natural light gradually extends. To find out the local sunshine time of the chickens when they were 20 weeks old, and take this as the standard, and use artificial light for the part of insufficient natural light.**
- **Gradually reduce lighting. Check the local weather data, find out the lighting time of the chickens when they are 20 weeks old in the daytime, plus 4 hours, that is the lighting for 1-4 weeks old. At 5-20 weeks of age, the lighting time is reduced by an average of 15 minutes per week, exactly the same as natural light time when they are 20 weeks old.**

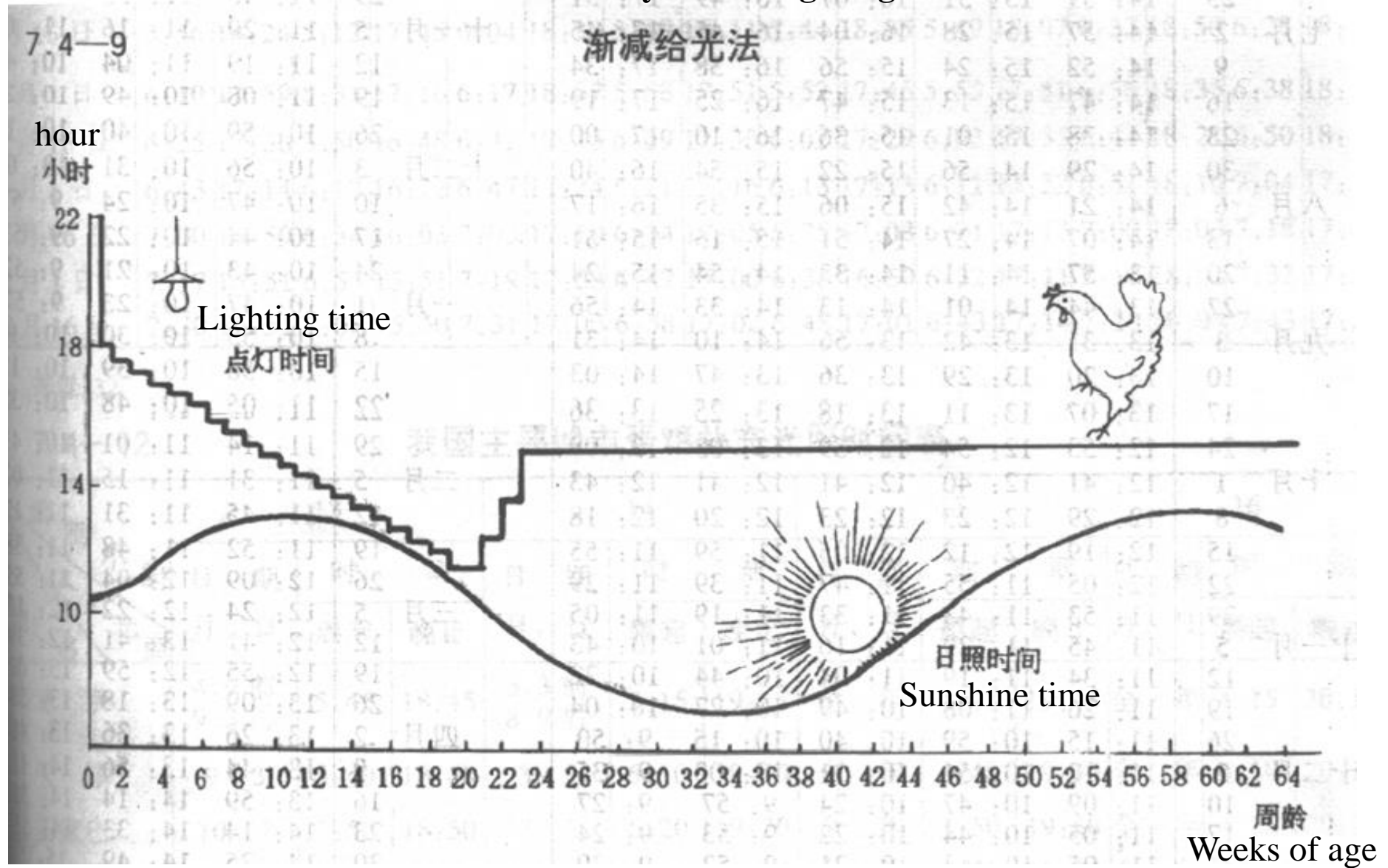
8 hour constant lighting method

8 小时恒定光照法



Weeks of age

## Gradually reduce lighting



## ➤ **Artificial light source**

- **Energy-saving lamps and LED lamps should be used, and warm light sources should be used.**
- **The length and intensity of lighting during the growing period directly affect:**
  - ✓ **The time of sexual maturity;**
  - ✓ **Future production performance;**
  - ✓ **Egg weight at first laying;**
  - ✓ **Duration of peak egg production.**



### ➤ **Light length (Photoperiod)**

- **The general principle is that light length should not be increased in the growing period and be reduced in egg-laying period.**
- **The total light length per day during the growing period are generally not less than 8 hours.**

## ➤ **Light intensity**

- **Light intensity should be determined according to the visual and physiological needs of chickens.**
- **Too much light wastes electricity, makes chickens nervous, easily frightened, active, energy-consuming, prone to fighting and pecking addiction.**
- **Weak light will affect the feeding and drinking, and can not stimulate the egg production.**
- **Light intensity should be increased to facilitate the chick's access to feed and water during the first week .**
- **Light intensity of 2-18 weeks should be low, which is conducive to keeping the chickens quiet, preventing or alleviating pecking, and saving electricity.**
- **Light intensity should be increased after 19 weeks to maintain higher laying rate.**

## **9. Adjust the group**

- **Feeding amount was increased or decreased according to the weight of chickens.**
- **For each immunization, the chickens were screened once, the wilted, sick and weak chickens were eliminated, and put at the end of the chicken house for centralized feeding.**
- **When the average weight of 18 w hens was below the normal weight of the breed, the time of increasing light should be delayed appropriately.**
- **After the grower chickens are transferred to the adult chicken house, the grower chicken house is cleaned and disinfected.**

## **10. Disinfection**

- **Chickens should be disinfected twice a week during the growing period, but they should not be disinfected within 24 hours before and after vaccination.**
- **Personnel entering the dormitory must change into sterilized work shoes and work clothes. Bathrooms and changing rooms should be cleaned daily and disinfected weekly.**
- **Items unrelated to production are not allowed in the dormitory area.**
- **All vehicles entering and leaving the field area and the dormitory area must be disinfected through the special passages for vehicle disinfection.**
- **People entering the dormitory area should step on the disinfection mat, fully soak the sole of shoes and soak the hands to disinfect.**
- **The sale of sick and dead chickens is strictly prohibited.**
- **Dead chickens should be disposed of in time, and places temporarily stored dead chickens should be disinfected in time.**

## **11. Immunization program and vaccination**

- **According to the characteristics of local common diseases, and the actual situation of the chicken farm, develop appropriate immunization procedures, and adjust in time.**
- **Vaccines should be stored and transported at low temperature, otherwise they quickly become ineffective.**
- **The remaining unsealed vaccine after immunization cannot be stored and reused.**
- **Vaccines used for the prevention of infectious diseases shall conform to the quality standards of relevant biological products of the State, and reasonable immunization procedures and methods shall be formulated.**



## **4. Other Feeding and Management**

- **Feeding and management at different periods**
- At 7-8 weeks of age, the cage area for chicken was increased and the stability of the environment was maintained by transferring or grouping.
- Liquid multivitamins were given prior to transfer to reduce the stress to chickens.
- At 9-12 weeks of age, the focus is to ensure the health and rapid weight gain; It is better to gain more weight than the standard weight, otherwise it will be difficult to make up the weight later.
- At 13-18 weeks of age, the increase of body weight gradually slowed down with age. The chicken size gradually increased and the cage began to get crowded. Pay close attention to the trend of body weight and evenness.

# Different production systems



**Cage system**



**Ground raising  
system**



**Free range system**

- In cage system, pay attention to the temperature, light and feed intake of the upper and lower layers, clean up the feces in time, and maintain ventilation.
- In ground raising system, bedding materials shall be laid on the ground.
- The bedding materials shall be highly absorbent and free from contamination and mold.
- Keep the bedding dry, and remove the wet beddings in time.
- Commonly used bedding materials are sawdust, wood shavings, chopped corn stalks, straw, broken corn cobs and so on.



- **Free range system**
- Shady areas such as woodlands and orchards are recommended.
- A 1.8 m high fence shall be erected around the site.
- The hen house has good thermal insulation ability.
- Adequate feeding and drinking water facilities are provided.
- In summer, some drinking utensils can be placed outdoors.



- **Chickens can be raised outdoors after 6 weeks and when the ambient temperature exceeds 16 °C.**
- **For chickens that have adapted to the external conditions, limit their exposure when the temperature is below 5 °C**
- **The stocking density for free range should be kept above 4 m<sup>2</sup>/chicken.**



- **The woodland around the rotating grazing chicken house is divided into two or more areas by fences for rotating grazing.**
- **Grass usually grows slower than the chickens feed, and is prone to overgrazing.**
- **The field was divided into two or more areas, when one area is short of grass, the chickens are moved to another area for grazing, so that the chickens are fed in different areas in turn.**
- **Free range for 1-2 weeks in each area, allow the land to grow and rest together.**



- **Parasite control**

- ✓ The range area should be kept dry and sanitary.
- ✓ When parasites such as lice and mites appear in chickens, they can be treated with medicine.

- **Prevention of pesticide poisoning**

- ✓ It is better to spray woodlands and orchards with biological pesticides harmless to chickens. If common pesticides are used, chickens should be kept in captivity until the toxicity of the pesticides has dissipated.



- **The management during the transition period**
- **Adaptation period: 2-3 days, open doors and windows during the day, keep a gradual temperature transition.**
- **The first range day: sunny day, above 15 °C, around 10:00 am;**
- **Open the inlet and outlet, and placing the feeding trough at a distance of 1-5m from the chicken house;**
- **The range time increases day by day.**



- **Teach and guide the chicken**
- **Drinking and feeding**
- **The training for moving to distant places**
- **Coming home training**
- **Teach to use the perches**
- **Teach to use the laying boxes**



# Feeding and management in different seasons

## ➤ Spring and autumn

- Do not graze too early;
- Supplement sufficient feed and , in particular, ensure the supply of various micronutrients;
- Focus on preventive health care, vaccination and environmental disinfection;
- Leave the chicken house later in the morning and let the chickens come back earlier in the afternoon.
- When the air temperature is below 5-8°C, the range of the chicken stops.

## ➤ Summer

- Pay attention to heatstroke prevention.
- Ensure adequate supply of drinking water, keep the metabolism balanced.
- Improve the nutrient content of feed, use it in the morning and evening when the weather is cool, strengthen the feeding.
- Pay attention to feed, drinking water and environmental sanitation;
- Regular deworming can keep the chicken healthy.



## ➤ Winter

- It is too cold to graze, or it will stop growing.
- Strengthen the insulation of the chicken house to achieve higher production performance in winter.
- Bedding fermentation can be used to enable chicken manure to be degraded in situ.
- Improve feed energy level and increase the supplementary feeding amount.
- Proper addition of green and juicy feed can maintain production performance and improve quality.
- Strengthen ventilation, prevent respiratory diseases, once found to have diseases, the chickens were immediately isolated and treated.



## ➤ **Grazing management in severe weather**

- **Climate changes, such as sudden warming, cooling, wind, rain, thunder and lightning, hail, etc., are the main causes of death for free-range chickens.**
- **Pay attention to the weather forecast and the weather changes. In rainy or windy weather, when the temperature drops, the chickens should be driven back to the house, and change the outdoor feeding to home feeding.**
- **Free range when the noon temperature is high, home feeding in early morning and late night, to prevent chicken from catching cold.**
- **Deal with the situations in time.**



**Grower chickens are the future and the hope of a farm.**

**Thank you!**