



## **GROW HEALTHY CHICKS**

**This series of information sheets discusses the management concerns that all 4-H youth must consider when developing a poultry project. Topics included in this series of information sheets include the following:**

- Before the Chicks Arrive
- Start Your Chicks Right
- Caring For the Chicks
- Give Your Chicks Room
- Chicks Need Fresh Air
- Plenty of Clean Water
- Properly Feed Your Chicks
- Keep Them Growing
- Vaccinate Your Flock
- Proper Hen Management

### **BEFORE THE CHICKS ARRIVE**

**Always buy quality chicks according to your needs. For egg production, buy sexed pullet chicks from stock having either Leghorn or Rhode Island Red ancestry. For broilers, choose straight-run chicks with ancestry of Plymouth Rock or commercial broiler strains. Straight run chicks consist of both cockerels and pullets, and usually cost less than sexed chicks.**

**If chicks are purchased from a commercial hatchery, request that they be vaccinated against Marek's disease. The vaccination protects chicks during their entire lifetime to this deadly disease and is best administered soon after hatching. Be sure that chicks are hatched in a U.S. Pullorum-Typhoid Clean hatchery to ensure better livability and fewer disease problems.**

**Before your chicks arrive, be sure that you are ready for them. Thoroughly clean and disinfect the brooder house and all equipment. This should be completed several days before the chicks arrive so that the house has ample time to dry. Make sure the brooder house is rat-proofed, has no cracks that allow drafty air to enter, and has a waterproof roof.**

**Place 4- to 6-inches of fresh litter material, pine shavings, on the floor of the brooding area and adjust the brooder to the proper temperature. A comfort area with an 85 to 90 degree F. temperature should exist at the outer edge of the brooder. A cardboard or wire brooder guard that is located about 24-inches from the edge of the brooder will keep the chicks near the heat source.**

**If a commercially manufactured brooder is not available, a disposable version can be made from a cardboard box that will brood up to twenty-five chicks. Insert a lamp receptacle through a hole cut in the side of a box. A 60-watt incandescent light bulb will provide adequate heat so the chicks can position themselves in the comfort area. Be careful to allow only the fixture to touch the box. If the hot bulb touches the box, a fire may result.**

## **START YOUR CHICKS RIGHT**

**Everything should be ready when your chicks arrive -- clean, dry house; clean equipment; brooder temperature adjusted properly; waterers and feeders filled; the floor covered with clean, dry litter; and the chick guard in place. You are now ready to place the chicks under the brooder.**

**Chicks that are either chilled or overheated get off to a slow start and may never develop into profitable layers. Be sure that they do not get too cold or too hot. A chick guard is used only during the first 3-4 days to teach the chicks where the heat is located. It should be removed by the seventh day of brooding.**

**When the chicks arrive, gently lift them from the box and place them under the warm brooder. Never drop the chicks or pour them from the box. It may injure some chicks and leave them stunted.**

**Baby chicks must have plenty of feed and water immediately after being placed under the brooder. Place at least four one-quart or two one-gallon waterers for each 100 chicks. Dip the beaks of about five chicks into the water. This helps them locate the water sooner.**

**Place several small piles of chick starter feed on egg flats or 12"x12" squares of paper and place among the waterers. The piles of feed encourage the chicks to eat at an early age. Small feeders are placed in the brooding area on the second day to reduce feed wastage. The egg flats and paper are removed when the chicks are five days of age or are seen eating from the feeders.**

**Disease can quickly spread if chicks are allowed to eat contaminated feed and water. Check daily to see if dirt, litter or manure is present in the feed. If small amounts of contaminants are present, they can be screened or picked out. Otherwise, replace the contaminated feed with fresh, clean feed. A major cause of disease is unclean feed and water sources.**

**Do not let the feed or feed troughs become wet. Wash the feeders only if adhering material cannot be removed by dry-brushing or wiping. If feeders must be washed, make sure they**

are completely dry before adding feed. All waterers must be emptied, scrubbed with a brush or rag, rinsed, and refilled with fresh water on a daily basis.

The first few days of a chick's life are the most critical, so be careful. Pay additional attention to providing for the basic needs of the chicks and you will be rewarded.

## **CARING FOR THE CHICKS**

Chick talk is the "key" to comfort. When contented, well fed, supplied with proper heat, comfortable and happy chicks talk in a low-toned, contented "cheep". When chilly the chicks cheep in a tremulous voice, or in a shrill tone. Chicks that are uncomfortable because of damp litter, warmth, or hunger and thirst emit a rapid and high-pitched sound. Always investigate the brooder house when chicks become shrill and noisy.

The recommended brooding temperature for day-old chicks is 90 degrees F. Reduce this temperature about five to seven degrees each week until 70 degrees is reached--at the end of the third week. Heat from the brooder is not usually necessary after this unless a severe cold spell occurs soon after the brooder is removed or turned off. In this case, the brooders may need to be turned on again for a short time.

Sanitation is a must! Baby chicks that are expected to live and do well must be provided sanitary conditions. Wash the waterers daily. Wet litter eventually produces a cold, damp house that invites disease. Be on the lookout for potential health problems and care for your chicks immediately.

Be sure the chicks have plenty of feed and water before them at all times. A complete chick starter feed is the only feed that chicks should receive until they are 6-weeks old. A "grower" or "finisher" feed is then fed to cockerels intended for slaughter, but pullets are fed a "developer" until they are 20-weeks of age. Later, laying hens are fed only a "layer" feed that contains all nutrients needed to maintain high egg production. Substituting grains for any portion of the layer feed will reduce the number of eggs produced.

The care you give your chicks during the brooding and raising period may determine how many chicks survive and how well the pullets will lay eggs.

## **GIVE YOUR CHICKS ROOM**

If chicks are to grow and remain healthy, they must have plenty of room to exercise, eat and drink. Provide plenty of feeders and waterers. Baby chicks will not travel far to find feed and water. Arrange feeders and waterers so chicks will not have to walk more than 10-feet to eat or drink.

Each chick needs one square foot of floor space until it reaches 6-weeks of age. Chicks also need enough room at the feed trough so that all birds can comfortably eat at the same time. Provide two 4-foot or six 18-inch feeder troughs for each 100 chicks during the first 3-weeks. Afterward, provide three or four 4-foot feed troughs for every 100 birds. Gradually

replace the quart-sized waterers with gallon-sized or automatic waterers. Provide three or four one-gallon waterers or two automatic water dispensers for each 100 birds.

**Don't waste feed!** Most of the cost of chicken production is for the feed. During the first few weeks the feed troughs can be filled to near the upper edge. Do not heap or pile the feed in the trough because the chicks will eventually rake it onto the litter. After the brooding period, the feed level is reduced until it is no deeper than half the depth of the trough. Use the feeder guards or grills to prevent the chicks from getting into the feed troughs. When chicks are allowed to walk in the troughs, they waste feed and contaminate the feed and diseases may become a problem.

The waterers must provide clean, fresh, cool water at all times. The waterers must be cleaned, rinsed and refilled daily. If possible, adjust water depth so that the trough is always half-full. Adjust the height of the feeders and waterers periodically so the trough edges or lips are at the same height as the back of a standing bird. If the troughs do not have adjustable supports, blocks of wood or bricks can be used under the troughs to raise their height. Proper height adjustment allows the chicks to eat and drink without spilling the feed or water. Correctly adjusted trough height also helps keep litter, dirt, and manure out of the troughs.

## **CHICKS NEED FRESH AIR**

Proper ventilation when brooding chicks is very important. However, drafts must be avoided. Drafts are the major cause of respiratory diseases and are eliminated in a properly ventilated house. In addition to disease stress, birds kept in a hot, poorly ventilated house will not eat or drink normally. This results in stunted, poorly developed pullets.

Be cautious of sudden weather changes and make appropriate adjustments to the house's ventilation system. In cool weather, close all cross-house ventilation openings, especially those near the floor. Ventilate from only the side of the house that is opposite the blowing wind. In hot weather, open air openings so that plenty of fresh can enter.

An important concern closely related to proper ventilation is prevention of a disease called coccidiosis. When coccidiosis strikes, heavy death losses may occur and many of the surviving birds remain permanently stunted.

Coccidiosis is caused by a small, one-celled animal (protozoa) that invades the digestive system. The lining of the intestines may become infected and bleed. Don't let this killer disease catch you by surprise. Bloody or blackened droppings are some of the first indicators of the disease, especially "cecal" type coccidiosis. Infected chicks have ruffled feathers, a less than normal activity level and will not drink or eat normally.

The best prevention for coccidiosis is careful sanitation and management. Keep all equipment clean, especially feeders and waterers. Coccidia organisms require damp or wet litter conditions to continue their life-cycle. When cleaning waterers, do not empty excess

**water onto the litter. Keep litter dry by stirring it weekly and remove any matted or caked litter soon after it forms. Proper ventilation is absolutely necessary to avoid damp litter conditions. Provide the house with adequate air exchange but avoid creating drafts, especially when chicks are young.**

**Coccidiosis can strike any time after the chicks reach 2-weeks of age. Don't wait for all the birds in the house to show symptoms before giving a treatment. At the first signs of this disease, get an appropriate drug from your feed dealer, drug store or hatchery man. Treat immediately following the directions indicated on the package label.**

## **PLENTY OF CLEAN WATER**

**Water is very important for the proper development of chicks. Provide an adequate supply of water that is conveniently located and provides access within 10-feet of any spot in the poultry growing area. Placing waterers on screened platforms or wooden blocks will help keep the litter drier and prevent litter from getting into the fountains**

**One quart-sized fruit jar water fountain is needed to provide water to each 15 chicks. Larger fountains are preferred for large numbers of chicks since they save time and labor. Two one-gallon water fountains are suitable for raising 100 chicks. These 100 chicks will drink at least five to six quarts of water daily during the first six weeks. As they get older, their water consumption will increase. It is sound practice to add more fountains as the chicks get older.**

**Be sure the chicks have access to fresh, clean, cool water at all times. Wash each fountain daily using a brush or clean rag. Constant inclusion of a disinfectant or sanitizer in the water is not necessary if water fountains are adequately cleaned and refilled every day**

**It is advisable to soak all watering equipment at least once each week in a sanitizing solution made of one-ounce chlorine bleach diluted in five-gallons water. Allow the equipment to remain in the solution for 15 minutes before draining and refilling with water. Rinsing with clean water prior to refilling is not necessary.**

**When the environmental or brooding temperature is extremely high it is essential that water be replaced several times each day. Chickens will reduce water consumption if the water temperature is warmer than 100 degrees F. Therefore, replacement of warm water will allow birds to drink the cooler water until it eventually warms up.**

**The use of sugar or vitamin/electrolyte additives to the drinking water is not necessary for producing quality, healthy chicks. If these additives are used, it is essential that the solutions be mixed and replaced on a daily basis. When using these solutions, it is necessary that all equipment get a thorough cleaning every day to prevent a buildup of disease causing organisms.**

## **PROPERLY FEED YOUR CHICKS**

**Your chicks need plenty of a high quality feed in order to do the best job. Feed a nutritionally-balanced feed obtainable from your feed dealer. Feed "chick starter" crumbles during the first 3-weeks and then switch to feeding a "grower" diet through 10-weeks of age. Feed a "pullet developer" between 10- and 20-weeks of age. If a developer cannot be located, continue feeding the grower diet through 20-weeks. After 20-weeks, feed a complete "laying mash" to main high production of good-shelled eggs.**

**Do not feed additional grains or ingredients with any of the complete feeds mentioned above. The starter, grower, developer and laying diets are formulated and designed as the only feeds that the chickens eat. When additional grains are offered, the chickens reduce their consumption of the complete feed by eating more grains, and will not receive all the nutrients they require. When this occurs, the birds become malnourished and may decline in growth rate or egg production, and die.**

**Provide plenty of feeder space. Each chick initially needs one-inch of feeder space, but this space requirement increases as chicks get older. Provide one or two 4-foot feeders for each 100 chicks during the first 3-weeks. After the third week, provide three 4-foot feeders per 100 chicks.**

**Don't waste feed! Three-fourths or more of the total cost for producing chickens is in feed cost. Never fill your feeders more that one-half full, or the birds will scatter the feed onto the litter and waste it. Also, keep feeder guards or grills in place to prevent feed wastage and contamination. Raise the height of the feeders as the birds grow in size. The lip of the feeder should always be the same height as the backs of the birds.**

**Don't let the presence of scrappy cockerels reduce the chance of growing good pullets. Cockerels make good broilers for eating at 7- to 9-weeks of age. Slaughtering these cockerels will significantly reduce your feed bill. If you need only laying hens, save money on the next flock by purchasing only sexed pullets when buying chicks from the hatchery. However, if this flock was bought as straight-run chicks, separate the cockerels at 6-weeks of age and make plans to slaughter them when they reach the desired size.**

## **KEEP THEM GROWING!**

**Proper ventilation, clean water, and a well balanced feed program will keep the chicks growing. Chicks grow faster and live better when given ample room. Add more feeders and waterers as the chicks grow.**

**Proper ventilation will aid in disease control by keeping the house and litter dry. Wet litter invites diseases. Without proper ventilation you will fail to get the maximum feed and water consumption, and without that you will not get good growth efficiency.**

**Pullets that are kept for the laying house need plenty of fresh feed and water before them at all time. Don't let them go hungry or the egg basket will go empty next fall. Remove all litter and foreign material from the feeders every other day. Let the chicks eat all the feed they want and then dump the material from the feeders. If the feed becomes wet (for any**

reason), immediately discard all feed, clean or wash the trough and dry thoroughly before refilling with fresh feed.

Overcrowding, excessive temperature, insufficient feeder and waterer space, poor diet, and parasite infestations contribute to cannibalism. Good management and care of the birds will prevent cannibalism from becoming a problem. Treat internal parasites monthly with an appropriate anthelmintic and spray birds periodically with an approved insecticide to eliminate lice or mite infestations. Contact your County Agent for approved medications. If cannibalism starts to be a problem, it may be necessary to debeak the birds.

When the chicks are allowed to range for themselves they must be protected from predators and exposure to wild birds. Be sure to provide protection, especially at night, to avoid injury from varmints. Control rats and mice to reduce feed contamination that can result in disease outbreaks.

Be on constant alert for the appearance of any symptoms that indicate the onset of a disease outbreak. If identification of a problem is made early, it is much easier to treat and eliminate the problem before severe damage to the birds occurs. Many diseases can be identified based on the symptoms of the lesions. Contact your County Agent or Extension Poultry Specialist for assistance in identifying any disease problem.

## **VACCINATE TO PROTECT YOUR FLOCK**

Heavy losses in egg production occur on most farms each year due to failure to vaccinate for Fowl Pox (sorehead) and Newcastle Disease. Don't let these "intruders" catch you off guard. Prevent them now while the cost is low. Several weeks of production will be lost if your pullets are not vaccinated and get the diseases after they begin laying eggs.

Vaccinating for both diseases can be done any time after the birds are 8-weeks of age. Don't wait too long after 8-weeks because you are taking a big chance on losing some of the birds. Be sure that birds have no diseases or parasites at the time of vaccination or you may get a serious reaction from the vaccines. Vaccinate for only one disease at a time, following with vaccination for the other about 3-weeks later.

The wing-web method of vaccination is used for Fowl Pox and Newcastle disease. The wing-web method is simple. All feathers must be removed from the web of skin near the "elbow" of one wing to ensure that all vaccine enter the bird. Dip the vaccinating needle (that accompanies the vaccine) into the mixed vaccine solution and punch it completely through the skin web. After the needle is removed, the bird will be vaccinated. Be sure that you vaccinate all birds on the farm that have not been previously vaccinated.

Newcastle disease can be also be administered using drinking water or dust application. Use the vaccine and method that is commonly used in your area and closely follow the directions on the vaccine container.

Ventilate properly to reduce stress from heat or diseases that can result from under or over ventilating. As the weather gets warmer you will need to increase the air exchange within the house. In cool weather, the ventilation requirements are much lower but adequate air circulation is necessary to reduce moisture and disease organisms. Remove all caked or wet litter as soon as it forms so that the house can be kept dry.

When pullets reach 16-weeks of age, preparations must be made to provide a constant amount of light to ensure good egg production. Provide an electrical lighting source that is controlled by a timer. Hens will need constant exposure to 16- or 17-hours of light each day or they will cease egg production and begin to molt feathers. Contact your County Agent for additional information on lighting for laying hens.

## **PROPERLY MANAGED HENS LAY MORE EGGS**

Good pullet management is essential for high egg production. If pullets are to mature into profitable producers, they must grow continuously throughout the developing period. Practices that help promote this growth and development during the growing period are:

- 1. ADEQUATE SPACE --** Every 100 pullets should have one-quarter to one acre of range. Allow 2 to 3 square feet per bird if raised in confinement.
- 2. FEED --** Keep a good growing mash in front of the pullets at all time. A complete laying ration provides all necessary nutrients. Feeding additional grain will unbalance the diet and may result in disappointing results.
- 3. WATER --** Developing pullets drink much and require plenty of water to maintain normal growth. Keep the water fresh and cool by keeping the fountains in shade. Clean all fountains daily.
- 4. SHADE --** Pullets are more comfortable if provided shade during hot weather.
- 5. GREEN FEED --** Clovers and tender grasses can be used to furnish grazing for pullets. A good tender grazing crop can reduce the feed cost by 5% to 20%. However, be sure to conduct a regular worm or internal parasite program to prevent infestations of parasites that the pullets can get while grazing on the range.
- 6. KEEP YOUNG PULLETS SEPARATED FROM OLDER HENS --** This will help reduce the possibility of transmitting diseases from the older hens to the younger pullets.
- 7. RANGE SHELTERS --** Provide one 10x12-foot shelter for each 100 to 125 pullets.
- 8. CONTROL PARASITES --** Pullets may become infested with worms. As previously stated, there are some effective drugs that can be used to control all internal parasites of chickens. Help reduce infestations by practicing good management and sanitation. Check a few pullets from time to time for external parasites like lice and mites.



**9. PROTECT FROM ENEMIES -- Be sure that predatory animals cannot get into the building where your pullets roost at night. It is better to lock the hen house door before, rather than after, they are visited by 4-legged or 2-legged animals.**

**-- REMEMBER --**

**While pullets are growing is the best time to build good body weight, vigor and vitality. The most critical time during a pullet's life is during the growing period. If you want profitable pullets, see that they develop well during the growing period.**

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