

Backyard & Small Poultry Flock Management Series: Brooding Tips for Successful Bird Performance

► Raising chickens can be an enjoyable way to produce eggs and meat for you and your family. Preparation is essential before the arrival of day-old chicks as they need extra care, particularly during the first days.

Brooding is the period after chicks hatch. During this time, chicks require a supplemental heat source, as they cannot regulate their internal temperature. They also need good-quality chick starter feed, water, and adequate lighting to find feed and water. Successful brooding promotes the development of the immune, digestive, and skeletal systems. The first step to successful bird performance is to select healthy chicks, followed by having the proper brooding setup, providing precise nutrition, and following good brooder management and biosecurity.

Preparing for Chicks

If brooding on the ground or in a box, prepare the bedding before the chicks arrive. Use good bedding material such as pine shavings to help absorb droppings and keep chicks warm. Sand as bedding during brooding is too cold for chicks. Ensure that feeders and drinkers are clean and the brooding equipment is working properly. Allow adequate time for the brooder to reach the proper temperature before the chicks arrive. This usually takes 24 hours.

Chicks need to be started in a brooder where they are safe in a temperature-controlled environment and protected from potential predators, including family pets. A cardboard box for a small flock or a larger container, such as a water trough, can serve as the brooding area. You can also start the chicks in a coop by setting up a brooding area within a cardboard ring. Whatever container you choose, make sure that the sides are high enough (usually 12 to 18 inches) to contain your chicks and prevent draft. Avoid containers with corners that encourage chicks to gather in the corners and away from the heat source. Cover the floor in a layer



of absorbent bedding and select the correct bedding material. Pine shavings work well, while other materials, such as straw or hay, are not absorbent. Newspaper is too slick and can lead to splayed leg. Improper bedding cause leg problems and cold stress by chilling chicks.

The brooder should contain a heat lamp (125 or 250 watts), feeder, and drinker. A red heat lamp can help prevent chicks from pecking each other. The temperature should be 95 degrees F to start and decrease 5 degrees weekly until the chicks appear comfortable at the temperature in the coop where they will be moved. Although it is easier to measure the temperature at your eye level, it is important to measure the temperature at the bird level, which is 2 inches above the bedding. The temperature of the brooding area should be for chicks' comfort, not human comfort, and should be maintained consistently regardless of the time of the day or night. Don't place feeders and drinkers directly below the heat lamp but on the edge of the radiant heat zone. This will prevent chicks from being overheated or chilled when forced to eat outside their comfort zone. Make sure there is plenty of feeder

space and plenty of feed available for all chicks to eat. Supplemental feed can be left on paper towels or additional feed trays for the first three to seven days to increase feed intake and promote good feeding behavior. Stirring the feed or adding fresh feed during your visits to the brooding area also stimulates feed intake. Putting marbles in the water base helps prevent chicks from falling in and drowning in the water. In addition, adding marbles to the waterer base may stimulate drinking by providing a shiny object for chicks to peck. It is also important not to offer cold water to chicks (especially very young ones). This can lead to chilling.

Because chicks will receive all their nutrients from the feed, it is essential to provide a high-quality chick starter feed as the only source of nutrition. The diet should contain a minimum of 18 percent protein; higher protein diets promote meat accretion or growth if you are producing meat-type birds. Diets should also have 0.85 percent to 1.00 percent calcium and at least 0.42 percent available phosphorus for proper bone development. Find nutrition information on the feedbag. Remember that not all feed is equal (table 1). Scratch grains or cracked corn are not a complete feed and do not contain enough protein, vitamins, or minerals to raise a productive chick because they have a lower level of nutrients.

Table 1. Nutrient Composition of Chick Starter and Scratch Feed

Nutrient	Chick Starter	Scratch Feed
Crude Protein	20% minimum	8% minimum
Crude Fat	3% minimum	2% minimum
Crude Fiber	6% maximum	7% maximum
Calcium	1% minimum	0.01% minimum
Calcium	1.5% maximum	0.51% maximum
Phosphorus	0.7% minimum	0.2% minimum

Medicated diets help prevent intestinal diseases in chickens and are an excellent option to help keep chickens healthy. Still, they do not replace good nutrition, biosecurity, and optimum brooding management. Supplementing water with extra vitamins and electrolytes can help prevent runting-stunting syndrome and may help prevent diarrhea. Remember that your chicks might arrive dehydrated due to their long trip from the hatchery to your brooding area. Supplementing powdered probiotics into your chick's water can also help them get off to a good start.

Choosing Your Chicks

An important decision when choosing chicks is what breed to get. Mediterranean breeds such as Leghorns have been selected to lay eggs prolifically, but they can be flighty. Cornish Rock crosses are broilers or meat-type birds and reach market weight quickly. Dual-purpose breeds, such as Rhode Island Red, New Hampshire, Plymouth Rock, and Wyandotte, are used for eggs and meat and are typically more adaptable to different brooding and growing conditions than broilers or Leghorns. A wide array of sex-linked breed crosses are readily available and highly popular for backyard egg production.

When choosing chicks, select strong, active, and alert chicks with bright eyes and free of deformities and injuries. A strong chick will right itself within 2 seconds if placed on its back on a flat, nonslippery surface. The navel where the yolk sac is attached should be fully closed and dry. Do not select chicks if they have a small swab of dried blood, string of dried yolk, leaky navel, or yolk sac outside the abdominal cavity. The legs should be smooth, strong, and evenly colored without pronounced veins, as dark, rough legs indicate dehydration. Chicks from commercial hatcheries should be vaccinated against Marek's disease (a nervous system disease) and infectious bronchitis. It is preferable to obtain chicks from a hatchery or breeder who is a part of the National Poultry Improvement Plan or NPIP because the breeding stock is tested and found to be free of diseases that can affect the chicks that you purchase.

Brooding Checklist

- Brood box
- Bedding
- Red heat lamp
- Thermometer
- Feeder
- Water Jug
- Quality feed

Keeping the Chicks Healthy

Chicks should be placed in the prepared brooder as soon as possible. Dip their beaks in water and then feed so that they immediately begin to eat and drink. After chicks have adjusted to their new environment, monitor their comfort. Adjust the temperature so the birds are spread out and look comfortable eating, drinking, playing, sleeping, or showing their normal behaviors. If the brooder temperature is too hot, birds will start panting, and if it is too cold, they will huddle. High or low temperatures will affect bird performance as birds outside their comfort zone eat less feed, drink less water, and have higher maintenance requirements for thermoregulation. Change bedding regularly, so birds have a clean and dry environment with good air quality. As a rule of thumb, if the brooding area smells bad to you, it is not a good environment for chicks.

Biosecurity is the best way to prevent the spread of diseases and keep chickens healthy. If you already have chickens at home, quarantine new birds to avoid introducing diseases or parasites to your chickens. Fourteen days is usually long enough to ensure that your new chicks are healthy before introducing them to the existing flock. Additionally, chickens should not be raised

with other bird species, such as turkeys or ducks, as different species can transfer diseases to each other. If you are raising different species, keep them in separate locations and follow good biosecurity practices such as washing your hands, using footbaths, and changing clothes when visiting multiple sites.

Store feed in a container that prevents contamination by rodents or wild birds that may carry disease. Raise chicks in an area free from snakes, raptors, or predators. Keep the area around your brooder and coop clean and free of spilled feed. Keeping the grass mowed around your coop helps reduce the number of small predators and pests.

Summary

Careful brooding and adequate early nutrition help promote the successful production of meat or eggs. Starting with quality chicks and providing them with a clean and comfortable environment and quality feed are ways to help your birds stay healthy and productive. If you pay attention to your chicks, they will tell you what they need to grow well.

Table 2. Troubleshooting for Brooding Chicks

Problem	Potential Causes	Solutions
Chicks pecking each other	Heat lamp color	Red lightbulbs in a heat lamp may prevent chicks from pecking each other. Ensure that there is enough feeder space for all chicks.
Diarrhea or pasty vents	Diet Cleanliness Temperature	Provide a diet with vitamins and electrolytes. Additional vitamins and electrolytes can be supplemented in the water. Keep the birds in a clean, comfortable brooder. Supplement with probiotics in the drinking water.
Leg problems	Diet Bedding	Make sure that feed is a complete diet that contains at least 20% crude protein, 1.00% calcium, and 0.5% available phosphorus. Use absorbent bedding like pine shavings. You can temporarily splint the legs with medical tape if a chick is bow-legged or splay-legged. Prevent this problem with good chick selection.
Lethargic chicks	Temperature Illness	Ensure the temperature is appropriate and warm the brooder (95 to 100 degrees F) before the birds arrive. Start with healthy chicks, provide a quality diet, and practice good biosecurity.

Table 2. Troubleshooting for Brooding Chicks (cont.)

Problem	Potential Causes	Solutions
Mortality	Chick source Cleanliness Diet	The best way to prevent mortality is to get chicks from a reputable hatchery and them with a healthy diet in a clean environment. It is normal for a chick to die occasionally, even under ideal conditions. If mortality is excessive, take deceased chicks to a state diagnostic laboratory for evaluation.
Noisy chicks	Temperature Feed and water	Noisy chicks are usually complaining about something being wrong. Check that the temperature is comfortable and the chicks have plenty of clean feed and water.
Not drinking	Water quality Water access	Chicks should be provided with accessible and clean water; change the water regularly. Ideally, the temperature of the water should be less than 77 degrees F.
Not eating	Temperature Feed access	Chicks may eat less if it is too hot, so make sure birds look comfortable. Make sure there is plenty of clean feed and that chicks can reach it.
Parasites	Cleanliness Chick source	Make sure the bedding and brooder are clean. Buy healthy chicks and quarantine new birds. Treat external parasites using topical powders or liquids. Treat internal parasites using dietary additives (internal) that can be purchased at a feed store or obtained from your veterinarian, depending on the type of parasite.
Respiratory issues	Air quality Cleanliness	Make sure bedding is dry and not musty or dusty. Change the bedding regularly. Ensure that there is enough room for all chicks.
Stunted growth	Feed quality Temperature	Feed a balanced and complete diet with more than 20 percent protein and sufficient calcium and phosphorus. Use scratch grains or cracked grains as treats but not to replace a complete diet. Make sure birds are comfortable and eating.



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New September 2022, ANR-2920

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