

Brooding Chicks, Keets, & Poult

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"A chick, chick here and a chick, chick there; here a chick, there a chick, everywhere a chick chick." That was the situation in our barn each spring, when the place was wall-to-wall cardboard boxes full of chicks, keets, and poults. This year we decided enough was enough. We needed a proper brooding facility.

We cleared out an underused part of our barn and built the brooder against one wall, with the barn wall serving as the back wall of the brooder. We divided the brooder into four sections to accommodate different species and different age groups. Each section works independently of the others and could easily be constructed as a single brooder tucked into a corner, or as a free standing movable unit.

Had we started from scratch, we would have made each unit 4 feet wide and 4 feet deep. Since we were working within existing walls, and we wanted four units, ours could be only 34 inches wide. That works out okay for us, as each unit can hold about four dozen chicks up to the age of about a week. As soon as they get active we move half into a second unit, and as they continue to grow we transfer them to either a barn stall or our larger outdoor brooder. Each of these indoor units could easily accommodate half a dozen chicks, or one dozen bantams, from hatch to the age of 8 weeks.

We considered designing the new units like a brooder we built behind the barn, which is raised off the ground and has a wire floor. That brooder is a convenient height for tending to the chicks and for wastes falling through the wire. But because the wire floor doesn't offer opportunities for pecking or dusting, chicks tend to peck at each other. Not a pretty sight.

For that reason we decided to build the new brooder directly on the concrete barn floor, cover the floor with several layers of opened out paper feed sacks, and top them with paper toweling for newly hatched chicks, then bedding as the chicks grow. For bedding we use either crosscut shredded paper or well-dried

grass clippings, whichever we have the most of. Cleanup is easy — all we do is roll up the paper sacks and toss the whole mess onto the compost pile. (We have yet to figure out what to use now that feed comes in poly woven bags, which aren't absorbent and therefore would allow unhealthful moisture to accumulate; we are considering sheets of corrugated cardboard, or perhaps plywood that can be removed and scraped off.)

Before we could finalize our design we had to decide what would be our source of heat. We had been using infrared heat lamps, but never were entirely happy with them. They burn out and leave chicks in the cold. They are expensive to replace and to operate. The heat tends to concentrate in one area, so chicks either pile up under the lamp to get warm, or press away from the heat to cool off. And the newer fixtures, made in China, start



Four brooder units built side-by-side along one wall of the barn. The individual units are identified by the letters A, B, C, and D. The rope and pulley system allows quick adjustment of the height of each heater panel by slipping the end chain onto a cleat attached to the wall (far left). Photos by Gail Damerow

falling apart almost as soon as we bring them home. We have always been concerned one might fail and start a fire.

We opted instead for Sweeter Heater pet heater panels made in the United States by Infratherm, the only company I know of that makes this type of heater. (For more information, see *Sweeter Heater ad on page 35.—Ed*) From the literature, I gathered that these panels work like the old time chick hovers, which suspend from the ceiling to provide space underneath for chicks to warm themselves without huddling. And that indeed turned out to be the case.

We also liked their low energy use, the fact that (unlike infrared heat lamps) the panels may be easily cleaned and sanitized, and they can't start a fire. In fact, Chuck Sharf, who invented the panels, told me about a university facility that used half Sweeter Heater panels and half infrared lamps, planned to switch to all heater panels, but didn't get around to it before one of the infrared heat lamps started a fire — and burned down the facility.

Panels come in four widths: 11, 16, 30, and 40 inches. For our 34-inch wide brooding units we chose the 30-inch size. The panels come in either side mount (which attach to the wall) or overhead mount (which hang from the ceiling). We needed the option of adjusting panel height as chicks grow, so we chose the overhead mount style.

With the heat source resolved, we designed the brooders so the heater panels can be easily lowered or raised, based on the required amount of heat needed at chick level. Although the chicks' body language is our primary indicator of their comfort, we installed a thermometer in each unit to aid with temperature regulation. We chose long probe units so the thermometers could be mounted outside the brooders for easy viewing.

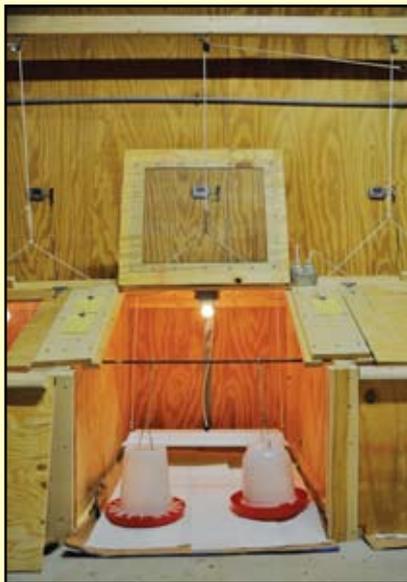
We used duct tape to position the probe wire and protect it from being pecked, leaving only the probe itself uncovered. That worked all summer until the final batch of rowdy guinea keets broke off a probe. To keep that from happening again, in the future the probes will be enclosed within a flat electrical surface mount conduit.

The brooder is constructed mostly of three-quarter inch plywood. The top of each unit is 36 inches from the floor at the back and extends forward 22 inches. This part of the top is fixed. The front section

of the top slopes toward the front and is hinged to the back section so it can be lifted for replenishing the feed and water. The hinged section has a large window cut into it, secured with quarter-inch hardware cloth, to provide ventilation and allow us to observe the chicks without disturbing them. The cut-out part may be used to close all or part of the window as needed to conserve heat, or may be removed altogether for maximum ventilation.

The front panel of each brooder unit is 22 inches high and slides down into a channel so it can be easily lifted and removed as needed to catch chicks or clean the bedding. Because the front panels and window covers were hand cut, each fits best in its original location. To ensure that these removable parts are always returned to the proper unit we labeled the units and their removable parts A, B, C, and D.

On our trial run we found that the heat



Unit C with the front panel removed and the lid lifted to show that it is ready for its first batch of chicks — paper towels line the floor, feeders and waterers are in place, the Sweeter Heater has been lowered to a suitable height for hatchlings, and the heater and light have been turned on.



Unit C with the front panel slipped down into place. The paper floor liner extends outside the brooder to ensure complete floor coverage within. Cards clipped to the side of each unit keep track of what kind of birds are in the unit, how many, and their date of hatch.



Unit C with the top closed. The block fastened between the hinges keeps the top from falling back against the panel adjustment rope when the top is opened. On the wall behind each brooder is a digital thermometer with a long probe that runs down the back wall and ends inside the brooder at chick height.



Unit C with the window cover in place. On cool nights the cover fills the window as shown; on days that are not warm enough to remove the cover entirely, it may be slightly offset to provide some ventilation. The electrical outlet on the right of unit C controls the heater panels for units C and D.



Switched outlets are used for the heater panels. When the red indicator light is on, the heater panel plugged into that outlet is warm. Using a switched outlet prevents damage to a plug that otherwise may occur from repeated plugging and unplugging.

panels needed to be lifted and lowered more often than we had anticipated, in order to view chicks hiding underneath, to catch and move chicks, or to adjust the heat level. So we developed a fast method of adjusting the height of each panel: We drilled two holes into the top back of each brooder unit and threaded a nylon rope through the holes to hang the panel from. The length of the rope allows the panel to be dropped to just above the chicks' heads (for hatchlings) or lifted to near the brooder ceiling (for when heat is not needed and the panel is turned off). A panel is raised and lowered by means of

a second rope, which is tied at one end to the center of the first rope, goes through a pulley, and ends in a short length of chain. To hold the panel at the appropriate height, one link of the chain is slipped onto a cleat attached to the wall. Adjusting the height of a heater panel involves simply changing the link that's slipped onto the cleat. The system works really slick and never fails to awe visitors.

The heater panels are located toward the back of each unit for two reasons. One is so the back wall and side walls will help retain heat to make a cozy place for the chicks to rest. The other is to allow maximum room at the front for eating, drinking, and other activities. The feed and water stations are located toward the front for easy refilling and their height can be adjusted as the chicks grow.

Our initial adjustment method was a short chain hanging from a length of rebar inserted into holes drilled into the side walls. A feeder or drinker was attached by means of a clip that could be moved to a higher or lower link to adjust the feeder/drinker height. That worked okay until we brooded Royal Palm turkeys, which at three weeks of age began flying up and roosting on top of the rebar and pooping on the feeder and drinker. So we switched to 6-inch by 9-inch shelf brackets attached close to the brooder ceiling — not so handy for perching.

A light above the feed and water sta-

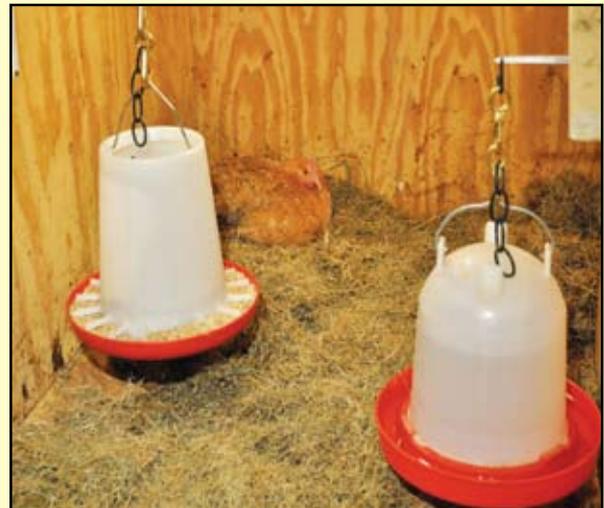
tions helps the chicks see to eat and drink. We started out with 60 watt incandescent bulbs, which turned out to contribute too much heat, so we switched to 15 watt soft white appliance bulbs and they provide just the right amount of light without creating heat. With the light at the top front, the heater panel throws a shadow at the back of the unit, which is ideal for resting chicks. We had no trouble with broken light bulbs until we brooded keets, which persisted in crashing into the bulbs and breaking them. An adjustment for next spring is to put protective cages over the light bulbs.

We had put a lot of consideration into our design and looked forward to seeing how theory would translate into reality. When the first chicks of the season were placed one by one into a unit, almost immediately every single one of them instinctively dove under the Sweeter Heater. Compared to chicks brooded under a heat lamp, however, these chicks spent less time huddled under the heater, pushing and shoving for a warm position, and more time engaged in eating, drinking, and exploring. Thanks to the comfortably radiant heat, at no time did any chicks pile under a panel or press away from the heat and pant.

One of our concerns was that chicks, and especially keets or poults, might roost on top of the heater panels. That turned out not to be a significant issue. A chick or keet occasionally perched on a panel,



The comfortable radiant heat encourages chicks, like these New Hampshires, to spread themselves throughout the brooder — some to sleep while others eat, drink, or explore. As chicks grow, the paper floor liner is covered with shredded paper. The height of the feeder and drinker is adjustable by chains hanging from rebar. On the back wall, duct tape proved inadequate for protecting the thermometer probe; in future the probe will be protected with flat surface mount conduit.



This unit's heater has been raised to accommodate a broody hen, bedded on well-dried grass clippings to absorb those enormous broody poops. After the first batch of 3-week-old poults perched on the rebar and messed all over the feeder and drinker, the rebar was exchanged for shelf brackets set close to the brooder ceiling to discourage perching. The brackets are slightly offset from one another to reduce congestion around the feed and water stations.

but by the time the birds are big enough to fly the panels are typically too high to reach. Poults are more inclined to perch on the panels, but Chuck assured me they can't cause any damage, and the panels are designed to be cleaned by spraying them with water, wiping them down, and then applying a sanitizer.

Aside from using the new setup to brood chicks, poults, and keets, we've also housed broody hens and even kept a baby goat safe and warm while its mama was busy giving birth to another kid. Although we haven't yet brooded waterfowl, I believe the Sweeter Heater is far more suitable and safe for brooding ducks and geese than the heat lamps we have used in the past, which occasionally shattered when splattered with water by playful ducklings or goslings. Of course, you wouldn't want to submerge a panel in water, but they are well sealed and can easily handle occasional splashes.

Aside from all the other advantages our new setup has to offer, we've discovered a bonus — the birds remain calmer as they grow. This season we didn't experience any pecking issues. And instead of becoming startled or frightened whenever their feeder is filled and water changed,



Above: Chicks, turkey poults, and guinea keets (like these) instinctively tuck themselves under the heat panel as soon as they are placed in the brooder. It's almost comical how each takes a quick look around and then makes a beeline for the heater.

Below: A nice feature of this setup is that chicks don't startle when the brooder is opened to refill the feeder and change the water. They just move to the back, under the shadow of the heat panel, and watch the goings on.



the little birds scurry under the shadow of the heat panel and turn to watch.

Gail Damerow has been the leading expert on poultry since her first book on raising chickens was published in 1976. She is the author of the recently updated and

revised classic Storey's Guide to Raising Chickens, 3rd edition, along with these other books available from our bookstore on page 52: The Chicken Health Handbook, Your Chickens, Barnyard in Your Backyard, and Fences for Pasture & Garden. 🐔

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