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TECHNICAL INFORMATION FOR TODAY'S FEED PROFESSIONAL

The Housing Link

Too often, calf housing is overlooked as the crucial tie-in to healthy calves

Housing often is the weakest link in a calf operation. A good baby-calf raising facility must minimize environmental stress on both calves and managers. Housing must protect calves from exposure to disease organisms and stress to minimize the incidence of scours and pneumonia. A convenient calf facility encourages an operator to maintain a higher level of calf care. The facility should maximize calf productivity, health and welfare.

General housing requirements for preweaned calves:

- Individual housing for each calf to prevent contact among calves,
- Isolation from all older animals,
- Well-ventilated but draft-free quarters,
- Protection from sun, shade, wind, rain and snow,
- Clean, dry pens with ample bedding,
- A feeding area for liquids, starter grain, and hay, with easily-cleaned feed containers, and
- A convenient location to encourage regular observation.

Several types of housing can meet these requirements. Some are: individual calf hutches, solar or gang calf hutches, and floor pens with solid sides in cold, well-ventilated buildings. Proper ventilation, not warm temperatures, is important in maintaining calf health.

Ventilation's a Must

Ineffective housing ventilation increases mortality. A good ventilation system allows adequate air movement, eliminates the accumulation of gases such as ammonia, and keeps humidity levels at a minimum**.** For these reasons, natural ventilation is recommended for baby calves.

Select a calf-housing system that provides dry, relatively draft-free surroundings year-round. Calf or solar hutches and naturally ventilated "cold housing" are excellent for maintaining good calf health. Floor-level pens can be used in cold barns that are properly ventilated, but if natural ventilation openings cannot be provided, exhaust fans may be necessary.

Isolated, heated, mechanically-ventilated calf barns are not recommended by calf experts. They cost more to build and operate correctly than cold housing systems. Often, ventilation is inadequate and humidity too high, complicating problems of air quality, disease transmission and condensation.

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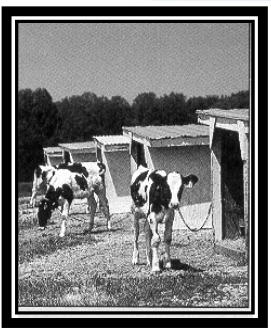


The result is unhealthy conditions. Increased sickness and management problems outweigh perceived benefits of warmer temperatures provided by this housing system, say Pennsylvania experts. "Many producers report that the incidence of calf disorders tends to increase in warm-environment facilities after several years, in part because warm temperatures do not reduce the viability of disease organisms," add University of Wisconsin calf experts.

However, some operators effectively manage warm, enclosed calf-raising systems. The general principles are the same as in cold housing, but facilities must be properly designed and managed to maintain calf health.

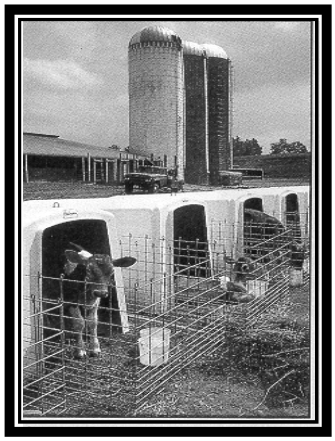
How to provide the proper environment for a calf? Furnish conditions that enhance the animal's inherent ability to achieve thermoregulation, and use ventilation to provide moisture control and to maintain suitable air quality.

Any attempt to house calves in an enclosed building with inadequate ventilation causes excessively high humidities that complicate problems of air quality, disease transmission and condensation; the net result will be generally unhealthy conditions, says Bill Bickert, Michigan State University ag engineer. Ventilation of calf barns in winter is mainly for control of moisture produced by animals.

Outside Hutches

A proven housing system for dairy calves in all types of weather is the portable open-front hutch located outdoors in a well-drained and protected area facing south. Versatility economy, ease in caring for calves, and manageable sanitation have made hutches a popular type of housing for several decades. Place only one calf in each individual hutch from birth until weaning.

The most common and successfully used hutches are made from wood, fiberglass, polypropylene or other solid materials and are roughly 8 feet deep, 4 feet wide and 4 feet high, though many modifications exist. For instance, domed hutches are used successfully by many calf managers.



In warmer climates, a popular style of hutch is built from 1 x 6-8 inch boards that form the sides and back. Alternate strips are left out of the exposed area to provide maximum air movement and the partial roof is sloped to divert rain. A hinged panel at the top of the back wall under the roof provides ventilation during mild weather but can be closed during cold or stormy weather. Manufactured hutches designed for warm climates also are available.
The advantage of home-built hutches is that they cost 50-75 percent less than manufactured hutches. On the other hand, it takes labor and time to construct wooden hutches. They're also heavier to move, need replacing more often than manufactured hutches, and are not as easy to clean as a smooth, solid material. Give wooden hutches a periodic coat of paint (non-lead) to help with cleaning.

No matter what the style of hutch, include an exercise area in front of it to allow the calf outdoor access. The area is usually as wide as the hutch and 4-8 feet long. The calf is restrained in the hutch area by either a fenced-in front yard or by a short chain tether.

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During cool or cold weather, make sure the sidewalls and back of the hutch are completely air tight to prevent drafts. During hot weather, hutches with small ventilation panels that open in the back seem more comfortable for the calf. Some manufactured hutches provide adjustable air outlets or ridge-top ventilation to remove warm, moist air.

Place hutches on a dry, elevated and sloped area to allow proper drainage. Concrete is not suitable. Put down a 6-12 inch base of sand or smooth-surfaced gravel or rock and slope it away from the hutches. Anchor lightweight hutches to prevent them from blowing over.

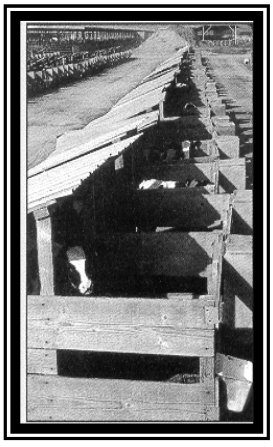
Bed each hutch well with sand, straw, sawdust or a suitable material. Make sure hutches are designed so hay and grain remain dry. One common hutch design features a side door for ease of filling inside feeders. Grain containers should be small, and easy to refill, clean and sanitized.

When a calf is moved to another housing system, tip the hutch up and clean all manure from its surfaces as well as the pack beneath it. Disinfect hutches or let them stand upright in the sun for at least a week after each calf is removed. Move the hutch to a new location and place fresh fill and bedding under the hutch prior to its reuse. Consider surface water drainage problems when you decide where to put hutches. In hot weather, locate hutches so that calves can be shaded during the day. Make sure they aren't exposed to blowing rain or snow. Place hutches near the feed and milk-preparation area.

Sheltered Hutches

Calf hutches adequately protect calves from inclement weather, but are not "user-friendly" for operators. Moving hutches inside a properly ventilated building during winter and spring makes it more convenient to feed calves in cold and wet weather, says Brian Holmes, University of Wisconsin ag engineer.

A naturally ventilated building with three sides and an open front is a popular alternative. These buildings have mono-sloped roofs and solar panels sometimes are used on the front. A disadvantage of sheltered hutches is the building expense. A tradeoff: Less bedding is required when hutches are inside.



Solar or Gang Hutch

The solar hutch is a portable skid-mounted unit, with 3-5 individual calf pens, 3-4 feet wide and approximately 7 feet deep. Its open front and low sloping roof allow penetration of sunlight during cold weather and provides shade from hot summer sun. Place solid divider walls between each calf within the hutch and extend them beyond the front feeding area to prevent physical contact between calves, recommends Bob Graves, Pennsylvania State university ag engineer. Pen access is provided by a removable front gate that also serves as a feeding unit.

Solar hutches provide more protection for the calf feeder but have the flexibility of a portable system, say Pennsylvania experts. They cost less than individual units, but are more difficult to move and clean, counter Utah calf-housing experts.

Community-type hutches used in the Southwest house three calves in one hutch with solid partitions between calves, says Ned Zaugg, Arizona extension specialist. The hutches are positioned on wooden slats over wash alleys or pits and flushed once per day. There is not manure build-up or bedding costs with this system, he says. Remove all calves at the same time and clean and disinfect the entire hutch for reuse.

Pens in Cold Barns

An alternative to outside portable hutches is to use a new or existing cold but well-ventilated barn with pens at floor level, says Graves. The building is naturally ventilated, with an open ridge and openings under the eaves, enabling natural air flow to remove the moisture produced by the calves.

Pens should be 4 feet by 8 feet with thee solid sides, Graves specifies. Smaller pens make cleaning necessary during the 0-2 month occupancy to prevent build-up of manure and associated gases and odors. An open feeding front allows the calf access to feed but solid panels on the side restrict access to prevent physical contact with neighboring calves. Extend openings to the floor to prevent stale air from being trapped in the pen, he says.

Construct the pens so they can be easily disassembled, and removed for cleaning. Portable, removable partitions allow the calf raiser to move pens to another location so the barn can remain vacant for extended periods of time to help break disease cycles. Clean barns and pens as soon as calves are removed to allow them to stand idle for as long as possible, Graves recommends.

As in a hutch, the calf can find the most comfortable location within the pen. Place removable covers over the rear 3-4 feet of the pen for cold weather or drafts.

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