

Calf Notes.com

Calf Note #30 – Basics of calf housing

Introduction. There are many ways to house young dairy calves - hutches, pens, groups, greenhouses, or calves tied to a post. Almost as many ways to house calves as there are farms. Calf housing is unique to most farms - responding to the unique features of the farm, including topography, land available, buildings on the farm, number of cows and calves, presence of water, fields, etc. Housing calves is also dynamic. It needs to change with changes in herd size, calving schedules, weaning schedules, etc. According to the 1991-1992 USDA NAHMS [National Dairy Heifer Evaluation Project \(NDHEP\)](#), the types of housing used by producers in the U.S. for preweaned calves are in the table.

The most popular housing type was hutches followed by individual pens in a calf barn. Note that the numbers in each column (winter, summer) add to more than 100% - that's because many producers use more than one type of housing. Regardless of the way calves are housed, there are four

Type of housing	Winter	Summer
Individual hutches	30.5	32.4
Group (super) hutches	2.2	2.8
Individual pens in the cow barn	14.6	13.6
Group pens in the cow barn	21.8	18.0
Tied in the cow barn	15.9	13.5
Individual pens in another barn (not cow barn)	20.5	19.1
Group pens in another barn (not cow barn)	12.8	14.0
Tied in another barn (not cow barn)	4.7	4.4
No building (loose lot or pasture)	1.2	5.6

fundamental requirements that are required for the success of any calf housing system. These are:

- Ventilation
- Isolation
- Comfort
- Economy

Ventilation is essential to reduce the transmission of airborne pathogens from calf to calf. Proper ventilation also eliminates noxious odors - which can either directly harm the calf or increase stress and reduce the animal's disease resistance. Ventilation means moving air - either naturally by providing sufficient windows, doors and vents (as in calf hutches) or artificially by use of fans, heat exchangers, and the like.

Proper ventilation means that the air inside the calf facility is similar to that of the outside air. The actual needs for an individual housing system depend on the season, temperature, humidity, number of calves, amount of air space, etc. A "rule of thumb" test that I use is this: if I can smell ammonia on my clothes after leaving a calf barn, it's likely that the ventilation in the barn is inadequate.

Isolation means that calves will be physically separated from each other. This fundamental concept assumes that calves cannot come into physical contact with another animal. This is important. Calves are born with immature immune systems. They are especially at risk if they do not consume sufficient colostrum. Much of the disease young calves experience is caused by enteric pathogens that infect the calf by fecal-oral or animal-to-animal contact. Naturally, if calves have direct contact

with other calves (or adult animals), the risk of transmission is greatly increased. (This also points out the need for calf caretakers to be diligent in their own personal cleanliness when dealing with calves!). By isolating calves (particularly prior to weaning), we can markedly reduce the risk of disease transmission. Much of the success of calf hutches in reducing disease and death loss is related to this concept.

Comfort is important to keeping healthy calves. Calves in a comfortable environment can utilize the nutrients in their diet for growth and not dealing with the stress of their environment. On the other hand, calves in an uncomfortable will utilize more of their nutrients for dealing with the additional stressors of the environment - trying to stay warm and dry for example. In addition, noxious gases and airborne particles can directly affect an animal's immune system, making them more susceptible to disease.

Comfort means **dry**. Drainage and bedding are important to keeping calves dry. Drainage is important, particularly for hutches. If you use hutches, they should be placed on top of large gravel or rock to provide drainage under the bedding. You can put smaller gravel on top of that to make the bedding area more comfortable. Even better if the hutch and outdoor area slope slightly away from the hutch, which can move water away from the calves.

Bedding plays a significant role in calf comfort. The type of bedding (straw, sawdust, shavings, etc.), environment/weather, age of the calf and the amount of feed and water the calf is eating will determine the amount of bedding that must be used to keep a calf dry and comfortable. Obviously, in cold, wet weather, the amount of bedding must be increased. Bedding should *always* be replaced between calves. For more information on calves and bedding, see [Calf Note #25 - Reducing fly populations in calf hutches](#).

Finally, allowing the bedding to dry in sunlight during the daylight hours (especially with hutches) can also help keep bedding dry and comfortable. However, a comfortable environment means that calves are not exposed to drafty, windy conditions. If calves are housed outdoors, they should be able to move out of the elements and away from drafts. Set hutches so that they provide a wind break.

Comfort means access to feed and water. Calves should have ready access to feed and water without having to travel great distances. If replacement calves are in pens or hutches, dry feed and water should be available at all times. Proper planning can make feeding convenient for the person feeding as well as the calf.

Comfort does not necessarily mean warm. Calves can grow quite well in cold housing systems - including unheated barns, pens and hutches. Calves have been successfully housed in hutches as far north as Minnesota and Canada. However, in the severe cold, special management is needed. Be sure to provide water more frequently during the day, keep a sharp watch on the amount of bedding and its moisture level (cold, wet calves is a sure recipe for disaster!) and feed additional feed (milk/replacer and starter) to provide the additional energy calves need for heat production (See [Calf Note #25 - Supplemental fat in liquid diets](#) for more info).

Economy is, of course, important to the producer. Minimizing expense is crucial to successful calf raising. Many producers make use of existing facilities and/or build their own hutches. There are many excellent designs for calf hutches. You can get them from the Extension Service, farm

magazines, and other sources. The [Northeast Regional Ag Engineering Service](#) and the [Midwest Planning Service](#) are excellent sources for building plans.

Economy means economy of labor. Housing should be designed to be labor efficient and provide ready access to observe calves. This is one disadvantage of calf hutches - people have to work outdoors in all types of weather. This is the biggest complaint with hutches and a major reason that greenhouses have become so popular.

Ease of cleaning after calves are moved out of the housing system contributes to labor economy. Again, hutches have a distinct advantage, because they can be moved to "clean" ground between groups of calves. This makes cleaning of previous areas easier and also reduces the pathogen load in the environment.

The VICE rule - ventilation, isolation, comfort, and economy can be applied to any calf housing system. There are many ways to house and manage preweaned calves, and all can be successful if they follow the above guidelines.

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