Tech Seminars

Tech Seminar #01 – Walking the Farm, Part 5

Introduction

Hello and welcome to Calf Notes. My name is Dr. Jim Quigley, author and webmaster of calfnotes.com. Thanks for stopping by. I hope you'll find this calf note to be informative. This is part five in the *Walking the Farm* series. In this video, I'll review some of the things I've observed about calf hutches and their use on dairy farms and calf ranches around the world.

I won't be exhaustively reviewing concepts about housing in general or calf hutches specifically. Rather, I want to point out a few of the things I've seen and perhaps what to look for when I tour farms, specifically related to calf hutches. There are several interesting and useful references at the website in the written version of this calf note, so be sure to review those for more background information related to calf housing in general and the use of hutches in particular.

When I think about any shelter for calves, I think about certain requirements. Calves require housing that is safe, clean, and dry. Within that framework, there are some general concepts that apply. The calf must be able to rest naturally, preserve body heat in cold conditions, and escape the sun, wind, rain, and snow. The shelter should be dry and comfortable, not excessively hot or cold, and not too wet. Good air quality without drafts is critical, and the shelter should be constructed and managed to minimize the risk of disease transmission.

When we consider all of these factors together, it's clear that calf hutches are an excellent housing option for calves from birth to about four months of age. That is why they are so widely used on farms around the world. I summarize these concepts into four key principles—or "Q-tips," if you will: the shelter must be safe, clean, comfortable, and efficient.

From a safety standpoint, we ask whether the calf can escape the elements, whether the shelter minimizes the risk of infection, and whether air quality is good without drafts or noxious gases. From a cleanliness standpoint, we consider whether the shelter can be easily sanitized and whether management allows adequate downtime between calves to reduce pathogen load. Comfort means the environment is dry, allows the calf to maintain body temperature, permits natural movement, and provides an internal environment equal to or better than the external one. Efficiency addresses whether feed and water are protected from the elements, easily managed, durable over time, and labor efficient.

Before we begin walking the farm, it's helpful to define what we mean by hutches. Hutches differ from pens, which are typically located inside barns and may house one or more calves, and from crates, which usually house one calf over a slatted floor. Hutches are typically constructed from plastic, metal, wood, or similar materials and are most often used outdoors. They usually house one calf, though larger "super hutches" may house small groups of calves.

Some recent research suggests that calves under two months of age can be housed in small groups, even in hutches. While this is interesting from a welfare and efficiency standpoint, I've seen very few farms successfully implementing this approach. For this discussion, we'll focus on individual hutches for calves up to about two months of age and group hutches housing four to eight calves up to about four months of age.

Safety is the most important element of any housing system. The shelter must allow calves to escape wind, sun, rain, snow, and cold, while minimizing infection risk. Air quality should be excellent, with minimal buildup of noxious gases and no drafts. In well-managed hutches, air quality is rarely a problem, but it still requires monitoring when walking the farm.

Most well-designed hutches provide adequate protection from the environment. For example, plastic hutches can keep calves dry and comfortable even after major snowstorms. However, not all hutches are safe. In some cases, calves are housed in structures made of wire and shade cloth that contain the calf but do not protect it from wind or rain. In cold climates, fabric doors can improve protection, but ventilation must be monitored closely to avoid ammonia buildup.

Examples from farms in Denmark, Russia, and the United States show that calves can thrive in cold environments when hutches are well managed and feeding levels are adjusted appropriately. One common observation is that outdoor hutches are often harder on workers than on calves. Proper bedding, such as deep straw, is critical—especially for newborn calves housed temporarily in maternity areas.

Orientation of hutches is also important. In cold climates, hutches are often positioned with their backs to prevailing winds or facing south to capture sunlight. However, abnormal weather events can still challenge these assumptions. Homemade hutches constructed from wire and metal may offer ventilation but often fail to allow calves to fully escape the elements.

Poor housing design leads to stress and increased disease risk. On some farms, inadequate shelter results in calves receiving frequent veterinary treatments, a clear indicator of environmental stress. In such cases, substantial changes to housing systems are often necessary.

One of the primary reasons for using hutches is social distancing. Calves are kept individually until their immune systems mature, with the lowest immune function occurring around four to six weeks of age. Maintaining individual housing until eight or nine weeks of age is an effective disease prevention strategy.

Proper spacing between hutches—about four feet between units and ten feet between rows—is recommended to prevent calf-to-calf contact. Examples from Minnesota demonstrate good

spacing, while crowded hutches under shared roofs defeat the purpose of isolation. Some large farms have successfully alternated hutch orientation to maintain distancing while improving labor efficiency.

Moving hutches between groups of calves is an excellent sanitation practice. Allowing ground to rest between uses helps reduce pathogen load through exposure to sun, rain, and UV radiation. Orientation should also consider nearby barns, lagoons, and prevailing winds to prevent contaminated air from reaching calves.

Ventilation problems can occur even in outdoor hutches. Poor drainage, lack of slope, and limited airflow can lead to ammonia buildup and respiratory disease. In these situations, ammonia test strips provide a simple, inexpensive method to monitor air quality.

Cleanliness is essential for successful calf housing. Hutches should be easy to disinfect and ideally moved between calves. Plastic hutches offer a clear advantage because they are non-porous and easy to clean. Wooden structures are more difficult to sanitize and may harbor pathogens despite painting or sealing.

Comfort depends heavily on dryness and drainage. Simple observations—such as checking calf knees or kneeling on bedding—can reveal moisture problems. Gravel bases, layered drainage systems, and sloped sites help keep calves dry. Concrete pads, while easy to clean, require additional bedding and careful moisture management.

Ventilation and temperature are closely linked. Some hutches can overheat in summer, especially translucent or metal designs. Raising the rear of the hutch slightly can improve airflow, but hutches must be secured to prevent movement in strong winds. Shade, paint, or relocation may be required in hot climates.

Flies are another challenge, particularly when straw bedding is used. Research shows higher fly populations with straw compared to sand or wood-based bedding. Excess heat and fly pressure can significantly stress calves.

Weaned calves adapt well to small-group housing, and super hutches provide an effective transition from individual hutches to larger group pens. Groups of four to eight calves work best and can be managed similarly to individual hutches.

Efficiency is the final consideration. Plastic hutches tend to have higher upfront costs but offer long service life and good return on investment. Feed and water placement affects labor efficiency and feed waste. Buckets placed outside the hutch improve labor efficiency but increase the risk of feed spoilage in wet climates, while buckets inside the hutch reduce waste but require more labor.

In summary, calf hutches are an excellent housing system when properly managed. They provide safe, clean, comfortable, and efficient housing while supporting social distancing during a critical period of immune development. Good management makes the difference between success and failure. Numerous references are available in the written calf note for further reading. Thanks for watching.

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