

Mitigating Young Calf Stressors

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What's stressful to a young dairy calf? I think we all know the answer: almost everything. From the birthing process to human handling, transport and shipping, vaccinations, exposure to pathogens, the environment, housing and even nutrition, stress can show up in many different shapes and forms to a calf — and not all calves will respond the same to those stressors. Some calves will power through without skipping a beat, while others may have a more traumatic response, such as breaking with respiratory disease and/or scours, skipping a feeding or simply being uninterested in feed. Regardless of the symptoms, stress cuts into the bottom line by increasing labor demands and treatment costs while also increasing the likelihood that dairy and beef animals, heifers and cows will end up with chronic health issues and will not perform at their best.

Regardless of the stressor, Hubbard Feeds has a strong lineup of calf health supplements that can help keep calves healthy and performing well during stressful events. [Blueprint[®] Calf Compass](#) is a new nutritional calf supplement from Hubbard that is designed to be added to milk replacer or whole milk before, during and/or after stress events.

Blueprint[®] Calf Compass includes the following technologies and solutions:

- **Egg proteins:** These specialized proteins are derived from the eggs of chickens that have been inoculated with specific antigens that help give calves the protection they need during times of digestive upset.
- **Bio-Mos[®]:** This Alltech solution helps block pathogens from adhering to the intestinal wall and enhances cell-mediated immunity.
- **Direct-fed microbials:** The five strains of lactic acid-producing bacteria included in Blueprint Calf Compass work to re-inoculate the digestive system.
- **Fructo-oligosaccharides:** This non-digestible sugar stimulates the growth of beneficial bacteria and inhibits the growth of pathogens in the gut.
- **Essential oils:** Blueprint Calf Compass features a unique essential oil blend that does not adversely affect intake. Essential oils have antimicrobial properties that can help inhibit or even kill bacteria.
- **Bioplex[®] organic trace minerals:** This solution from Alltech helps deliver highly available and readily absorbed trace minerals, leading to optimal overall health and immune status.
- **Vitamin E:** Elevated levels to serve as an antioxidant.

Common young calf stressors and tips for managing them:

The birthing process

- As has been well-established in the literature, calves that experience a difficult calving often also face the following issues:
 - A greater risk for infectious disease
 - Difficulty maintaining core body temperature
 - Decreased absorption of colostrum antibodies and immunoglobulins
 - Poor oxygen saturation
- If calving assistance is needed, ensure that all of the required equipment is clean and sanitized prior to using.
- A calf that experiences a difficult calving should be rubbed down with a clean and dry towel to stimulate their lung function and oxygen saturation. Ensure that calves receive high-quality, clean colostrum as soon as possible after birth.
- During the cold-stress season, warm calves in a clean and sanitized warming box. Once the calf is dry, fit the calf with a clean calf jacket.

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CALF SUCCESS

Vaccination

- Vaccines often lead to a short-term weakening of calves due to the immune response they generate. Aside from this immune response, calves also experience stress due to handling during the vaccination process.
- Closely monitor the animal's behavior prior to vaccination day. Consider delaying the vaccination of any calves that may be dealing with an adverse health event.
- Use intra-nasal vaccines if/when possible, to reduce handling stress.

Handling

- Make the calf's first human interaction a positive experience to minimize stress and any potential impact it could have on their lifelong behavior, health, and growth.
- When moving newborn calves, use the appropriate equipment — such as a wheelbarrow or a special calf cart — to minimize the potential for both stress and injury.
- Practice patience when handling young calves and move slowly to reduce the potential for stress.

Transport and receiving

- Calves are often transported to a calf-raising facility within the first few days of life. To minimize the stress associated with these moves:
 - Provide ample clean, dry bedding in a clean, sanitized environment. Calves retain heat better during transportation when they are laying down and resting.
 - Provide good ventilation without drafts.
 - When loading and unloading calves, use proactive, gentle handling and avoid unnecessary distractions, such as dangling chains, loud noises, changes in flooring and texture, and sudden changes in color, from light to dark or sunny to shaded.

Weaning and transition

- The weaning period is another major stressor for a calf within the first few months of life. Proper weaning and transition management is key for a successful calf program.
- Give calves plenty of time to complete the weaning process and ensure that they're consuming adequate amounts of calf starter each day before their milk diet is completely removed. At a minimum, calves should be consuming 3 lbs. of calf starter per day for three consecutive days before weaning is complete.
- Calves on an intermediate or accelerated milk-feeding program take longer to ramp up on starter intake. Give these calves more time prior to weaning and post-weaning to reach starter intake benchmarks.
- Identify low-intake calves early and give them more time to ramp up on calf starter intake before weaning.
- Keep calves on starter after they move to their grower pen. Intakes can drop by 25% or more when calves are moved to the next phase. Keeping calves on calf starter for the first two to three weeks they are in their new environment will help reduce stress and keep calves on track.

Spatial allowance and bedding

- To reduce environmental stressors, young calves should have a spatial allowance of at least 30 ft² per calf. This is especially important in co-mingled housing situations.
- Dirty, wet bedding is not only stressful for a young calf but also creates the perfect environment in which pathogens can grow. Repeat after me: The rule of thumb for bedding is that it should be clean and dry, clean and dry, clean and dry.
- In cold-stress conditions, calves should be provided with ample, insulating bedding to allow them to stay dry and nestle in. Enough bedding should be provided so that the legs of the calves are not visible when they're lying down.
- Calf starter intakes can be impacted if bunk space is limited. Ensure that all calves can access feed at the same time and that each calf has at least 22 inches of bunk space.
- If feeding milk with a milk bar, ensure that there are more nipples available on the feeder than there are calves in the pen. Calves tend to bounce from nipple to nipple on a milk bar, and additional nipples will help ensure that more submissive calves can also get access to the milk.

Hot/cold stress

- The thermoneutral zone for a newborn calf is 50–78°F and is 32–73°F for a one-month-old calf. In temperature conditions above or below these thermoneutral zones, certain management practices need to be implemented to reduce the impacts of these environmental stressors:
 - **Feeding strategies to combat cold stress**
 1. Feed 50% more milk volume per day. E.g., Feed 3 quarts per feeding instead of 2 quarts OR feed three times a day instead of twice a day.
 2. Use a high-fat supplement, like [Milk Energizer](#), to increase the energy content of the milk solution.
 - **Feeding strategies to combat heat stress**
 1. Keep clean, fresh water in front of calves at all times.
 2. Offer midday electrolytes, like [Rite-Lyte](#), to encourage calves to drink water and to improve their hydration status.
 - **Management strategies**
 1. Cold stress: Provide ample amounts of clean, dry bedding, and fit calves with calf blankets for at least the first three weeks of life.
 2. Heat stress: Provide access to shade and a well-ventilated space.

Pen moves

- Any disruption to a calf's environment can be a stressful experience. Limit pen moves as much as possible in the first two months of life, and only change the housing environment once calves are weaned and are consistently consuming adequate amounts of calf starter.

Nutrition

- Consistency is key when it comes to nutrition and its relationship to calf stress. The same milk replacer should be fed at the same time, in the same mixing ratio and at the same temperature every single day. Any deviation can be stressful for calves and could lead to digestive upset. If feeding whole or waste milk, use a balancer like MilkTopper or Milk Enhance™ to target a consistent solids percentage and protein-to-fat ratio.
- Calves should be offered ad libitum calf starter — like Hubbard's [Blueprint® Elite Texturized Calf Starter](#) — that is fresh, contaminant-free and of high-quality to promote growth and early rumen development.

Air quality and ventilation

- Poor air quality and sub-standard ventilation systems can wreak havoc on your calves, resulting in a buildup of pathogens and a high incidence of respiratory disease.
- Design calf barns with ventilation in mind, whether by using positive pressure tube systems, cross-ventilation with curtains and/or fans.
- Calf barns should undergo a minimum of four complete air exchanges per hour in the winter and 10 or more air exchanges in the summer to maintain the appropriate air quality for young calves. Be careful to design your ventilation systems properly to ensure that young calves are not exposed to drafts.

Exposure to pathogens and other pests

- Any pathogen exposure a calf experiences sets that calf up to be inoculated with said pathogen. Depending on the pathogen, calves can experience digestive upset, scours, respiratory challenges, joint pain and more.
- Proper colostrum management and the strategies outlined above can reduce the potential for pathogen exposure and improve a calf's ability to fight off any exposure that can't be avoided.
- Washing and sanitizing all calf-feeding equipment between each feeding is essential to ensuring that pathogen exposure remains low. Following stringent cleaning protocols can help you maintain your sanitation program.
- Other pests, including flies, birds and rodents, can increase calf stress. Implement a fly-control program for your calves by spraying, keeping grass cut short, and using ClariFly® in both the milk and calf starter during fly season.

Whatever calf stressors manifest on your operation, Hubbard Feeds is here to help. Contact your Hubbard Feeds representative to learn more about the management and nutrition strategies that will help keep your calves healthy and performing well when stressors come knocking.