

CALF PSYCHOLOGY AND STRESS

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My definition of stress, for this discussion, is anything that causes adrenalin to flow. Adrenalin is the “run or fight” hormone that prepares the animal’s body to do battle with its enemy. Adrenalin causes the heart rate to increase, the blood vessels in the digestive tract to close down to divert blood to the muscles, and the body is prepared to run from its enemy, or fight it. All other non-essential functions are put on hold so the body can deal with its attacker, perceived or real. Peripheral blood vessels constrict so bleeding is reduced in case of a cut on the extremities. I do not believe there are degrees of stress. The animal is either under the influence of adrenalin or it is not. The variable is how long the stress lasts and how often it occurs. Personally, I have had a few times of stress in my life and if it was prolonged, I felt like I had a brick in my stomach. I imagine a calf feels the same way. I like my college professor’s example of explaining adrenalin effect. He says that if you are parked on a country road with your girl friend and the action is moving in your favor, and a police car pulls up along beside you and flashes a spot light on the situation, you might as well take her home because it is going to take a few hours for the adrenalin effect to wear off. Adrenalin hormone takes precedence over all the other hormones and easily overrides the sex hormones.

Adrenalin suppresses the immune system. This is the effect that is very important in the baby calf. *Pasteurella multocida* is a normal inhabitant of the respiratory tract in the baby calf. Stress suppresses the immune system and allows the *Pasteurella* to multiply at a rapid pace. In 14 days there are large numbers of the organism and they move down into the lung and pneumonia is the result. This is why respiratory problems usually begin after the second week.

The baby calf hates change, so immediately get it from the maternity area to the place it is going to be for the next month. Do all the stressful things you are going to do to the calf the first day into your facilities. Especially in the case of purchased calves, the calf has left its happy home, been trucked and commingled with others that it doesn’t even know and no matter what you do to the calf, I do not think it will make adrenalin flow more than it already is. Whereas, if you delay processing the calf for another day or two, the calf goes through another bout with adrenalin. I am aware of a few calf programs that try not to be too hard on the calf at one time, so they give the calf an injection every day of the first week. Do you believe the calf thinks it is going to be a pleasant experience when it sees you coming? Do all the hurtful things you plan to do to the calf, the first week, on day one. Then become friends with the calf. When the calf sees you coming, it believes it is going to be a pleasant experience and the calf is glad to see you. I believe the calf will not produce adrenalin due to routine procedures, if carefully handled, after the first week. If the calf loves you the adrenalin will not flow.

I worked with a dairy-beef client with two calf barns raising calves on a labor lease basis. The barns were across the road from each other. Each had veal type elevated stalls. They used the same calf buyer, the calves were purchased and trucked the same day. The same feed was used. The same health program was utilized. One barn would have less than 5% death loss, while the other always had a 15% to 20% death loss. The owner had watched the situation and could not determine the problem. I was asked to help. I watched the low death loss barn being fed. The calves were up to the front of their stalls wanting to lick on you, etc. The feeder would pet them and talk to them while feeding. Next I watched the high death loss barn being fed. When we opened the door to the calf room, all the calves bolted to the back of their stalls and remained there until all the calves had been fed and we had exited the building. All the calves were pumped in buckets, veal style. Once we were out of the room the calves came forward to drink their milk. I noticed several small ball bat like clubs spaced around the barn. I asked what these were for. The feeder said he trained his calves to not stick their heads in the bucket until he was finished feeding. Shortly after the barn was emptied, it burned to the ground, saving the calf owner from having to fire the raiser. It is my view the calves were trained to avoid the feeder and every time the calves saw the feeder, adrenalin flowed, hence the high death loss, poor feed efficiency, high medication costs, etc.

A swine research project demonstrated a direct correlation between feed efficiency and rate of gain based upon the diameter of the pig free area around the swine herdsman when he would step into the pens of the nursery and especially the finishing unit. The herdsman with the pigs chewing on his boots had the best efficiency whereas the herdsman the pigs tried to avoid had the poorest results.

Calves use the "buddy system", if given the opportunity. They pair up and the relationship can be lifelong, so put even numbers of calves together. No calf likes to be "odd calf out." I have observed heifer calves that I had calfhooed vaccinated for Brucellosis and then reworked them a year later. The ear tags will run in sequences, the same as when vaccinated the year before. Sorting the calves often times breaks up a relationship and that is another stressful time. It is easier for the calf if it has a buddy to share its agony.

Avoid mixing calves as often as possible, and never more often than once a month. Each time they are commingled a new "peck order" is established and this is quite stressful. Even though the calf does not appear to fight, like pigs. A new group of commingled pigs will fight fiercely for two hours and then whoever is still alive, knows exactly where it fits in the peck order. The calves go through the stress mentally and the adrenalin flows. A calf can worry itself to death. Work done at the University of Wisconsin demonstrates mixing adult cows costs several pounds of milk per cow per day for the first week until the peck order is established for the group. Do your mixing with larger groups at a time and no more frequently than absolutely necessary.

I had the pleasure of working with a calf ranch where I thought the calf raiser "did everything right." The calves were extremely well cared for by an excellent calf feeder. All went well for the first month and then the calves were moved every two weeks. First

to a group of 4, then two weeks later to a group of 8, then 16 and 32. I thought this was ideal, mixing in small groups at a time. However, *Pasteurella pneumonia* was uncontrollable, regardless of treatments. We even went to my old standby of vaccinating the calves with a modified live virus vaccine every time they were commingled. But the respiratory problems were too great to live with. I consulted one of my California friends and they told me they went from an individual hutch to a pen of 100 calves and one Mexican. I tried to implement the practice on the ranch, but the calf feeder was so set in her ways, she was not open to change. My client closed out the operation and today the calf ranch is a corn field. This was an eye opening experience for me. I finally realized the significance of the "peck order" in calves. It is my opinion establishing the peck order is extremely stressful and adrenalin flows, suppressing the immune system. Calves that went from a single hutch to a group of 100 performed better than calves that were multiple staged as groups of 8, 16, and then 32, etc. Group fed calves need to be grouped properly at the first mixing and not redone, as it will cost you by stressing the calf. Sort the calves right the first time and then leave them together, if you have to pull a calf, leave it out of the group.

Relating to my former swine experience, it was a proven fact the hogs went to market a few days earlier if they were left in the original finishing pen. My client had an open front Cargil unit. New pigs were placed in the first pen and then moved periodically and all the hogs were sold out of the last pen in the building. The owner tried to start this procedure of leaving the pigs in the pen they were placed in and then sold from. But he had a hard-headed herdsman that still moved the pigs. The owner used the gates between pens as reinforcing rod and poured concrete walls between the pens. Now if the herdsman wanted to move pigs, he would have to lift them over the wall.

I am sure all of us are sometimes frustrated because the client will not follow your directions. I have a successful way of handling that situation in most cases. I consult with a major feed company. They paid me to go to a 300-cow dairy operated by two brothers and a sister. The sister raised the calves. She immediately told me I was the seventh veterinarian to try to tell her how to raise calves and it was not going to do any good. They even had a leading University Veterinarian there and "she doesn't know nothing." I realized I had a challenge. I ask her in detail exactly how she raised the calves. She told me and she was quite proud of her job. I did not attempt to tell her how until I ask one question. "Are you happy with the results?" Her brothers then spoke up and said "No, we have lost 65% of our heifer calves for the past two years." My next question was "Would you like to try a different approach?" The brothers said yes and the sister was silent for a couple minutes and then she asked "What do I have to do?" The answer was simple, they had a continuous flow system through a bunch of "boxes" in the calf barn. They were very clean, etc., but the continuous flow was the problem. I said "hutches", the brothers said no problem, we purchased them over 6 months ago, but she wouldn't use them. Now they are in hutches and all is well. The client must convince themselves they want to change. It is the old story, "you can lead a horse to water, but you can't make him drink."