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# Motherly Instinct

*Tips on assisting the bonding process.*

by Heather Smith Thomas

Occasionally you encounter a cow or heifer that doesn't want to mother her newborn calf. Most reluctant mamas change their minds in a day or so and are good mothers from then on. A few seem to have a hormonal deficit, and even though you persuade them to mother the calf this year, they are reluctant again at the next calving. Most get better over time, but some are just as stubborn on their fifth calf as they were on their first.

## Hormones are key

The bonding process is a complex blend of hormonal-induced and learned behavior. Mature cows that have already had calves are more apt to quickly mother their offspring than first-time heifers. Experience is part of the equation — older cows tend to be more consistent mothers with more maternal drive than heifers — but only a small part.

Dr. Joseph Stookey, Western College of Veterinary Medicine, Saskatoon, Saskatchewan, says hormones initiate and drive most of what we perceive as maternal behavior. “Some cows, especially older cows, become interested in any newborn calf, up to a week before they actually calve. Their hormone pump is already primed; those hormones are already reaching a level that makes them receptive to any new calf,” he says.

“At the other end of the spectrum are cows that don't have proper hormone profile or levels, and don't want their calf. We see this most often in first-calf heifers or in some of the females we assist, or those that undergo a C-section. If it's too much of a rodeo getting the cow in or she suffers too much trauma, she may be less interested in the newborn calf. There are other hormones overriding the whole system, due

to stress, pain, and some of the drugs used during a C-section,” says Stookey.

Changes in progesterone and estrogen levels initiate the birth process, but rising oxytocin levels trigger maternal behavior. Oxytocin is released in the brain during birth. “Its presence in the olfactory bulb of the brain helps explain the role of odor in the bonding process, with the cow recognizing her calf by smell,” he says.

“Cervical stimulation is crucial for proper hormonal triggers,” explains Stookey. Release of oxytocin is caused by stretching and stimulation of the cervix and birth canal. Cervical stimulation, the gradual dilation of the cervix as the feet of the fetus push against it with each uterine contraction and the subsequent passage of the fetus through the cervix, is one of the main triggers for oxytocin release.

“With a C-section there isn't much cervical stimulation, since the fetus doesn't come through. This could be a factor when that cow is slow to mother her calf,” says Stookey.

First-calf heifers produce less oxytocin than cows that have had previous calves, and their having a lower level of this hormone may be the reason why heifers may be less motherly and more apt to reject or abandon their calves. “Giving birth seems to prime the system and allows for release of larger quantities of oxytocin with subsequent births,” Stookey says. “Heifers are less experienced than cows, and also have lower levels of oxytocin release in the brain during calving.”

## Heifers unsure about motherhood

Sometimes a heifer is confused or indifferent toward her calf at first. She may continue to lie there after the calf is born and not bother to get up. When she does get up,

she seems surprised to see this strange, new wiggling creature behind her. She may walk away, ignoring it, or kick the calf when it gets up and staggers toward her. Some heifers attack the calf if it tries to get up.

If you had to pull a heifer's calf, this procedure may disrupt the normal bonding process. If you take a newborn cold calf to the barn to warm and dry it before the dam has a chance to smell and lick it, this intervention may also disrupt proper bonding.

“One technique that helps facilitate maternal response is smearing birth fluids across the muzzle and tongue of the dam following an assisted delivery,” Stookey says. “This seems to jump-start the maternal response. Simply moving the newborn to the front of the mother may not be sufficient stimulus to start the maternal behavior, especially for some first-calf heifers. Pouring feed onto a newborn calf may entice some reluctant mothers to approach the calf and eventually come in contact with birth fluids as they eat the feed. Any attractant that can stimulate the cow to lick the calf is useful.”

If a heifer is not interested in her calf, help it nurse. The act of nursing triggers release of oxytocin, the hormone that stimulates uterine contractions and milk letdown, and makes a cow or heifer feel more motherly. In some instances, a heifer may not have much milk at first. Then as her milk starts to come in, she becomes more interested in her calf. If you can help the calf nurse the indifferent heifer a time or two, she usually will decide she likes it. You may have to restrain her for the nursing so she won't run off or try to kick the calf.

“If you can stimulate milk letdown a few times by assisting the calf in nursing, the hormone comes on board and improves maternal behavior,” Stookey says. “Oxytocin



A newborn calf is assisted in the process of nursing, while its mother is restrained in a headcatcher with a foot tied back so she can't kick at her baby.

PHOTO BY HEATHER SMITH THOMAS

can switch off a heifer's aggression, reluctance or fear, and turn it into interest and mothering."

### Heifers strongly opposed to motherhood

If a heifer doesn't accept her new calf or viciously attacks it, you need to keep her from injuring or killing her calf. If she's in a barn or pen she may slam it into the wall or fence. In an open field she may eventually get tired of rooting it around, knock it down and walk away.

Sometimes the new mother's instincts tell her this is something important and she must deal with it, but she's not sure how. She smells it and starts bellowing and rooting it around, butting it with her head if it moves or tries to get up. She may knock it down when it tries to stand. She's on the fight, ready to protect this new calf from anything and everything, but she's confused and focuses all that aggression toward it.

Usually, however, if you stay out of sight and just monitor the situation, the heifer gets it figured out. A clue that she's going to be a good mother is that she is furiously licking the calf and mooing at it even as she knocks it around. She just needs a little time to transmit that motherly attitude in the right direction, encouraging it to the udder instead of rooting it around so harshly that it can't get up.

By contrast, if a heifer is not licking her calf and merely knocking it around with her head, you'll have to intervene. If she just ignores it except when it moves and then charges at it, there's a good chance she's not going to mother the calf.

Sometimes after the calf nurses, the aggressive heifer simmers down and starts to mother it, but reaching this point may take several supervised nursings, with the calf safe in a penned-off area between nursings so she can't hurt it, until she changes her mind.

### Dog trick

Sometimes if a cow won't mother her calf, you can kick-start her protective instincts and change her mind by bringing a dog into the pen or nearby. The urge to protect a calf from predators is so strong that this trick will often get a cow excited and upset about the dog, and she will think about the calf and want to protect it. This trick may help her develop an interest in the calf and start to mother it.

### Restraining the mother

If a cow or heifer refuses to mother her calf, keep the pair in separate adjacent pens or stalls for a few days so she can't hurt it.

Leave hobbles on her hind legs so she can't kick it at nursing time.

If you don't have a separate pen, put a panel across the corner of the stall or pen to make a safe enclosure for the calf. Let it out with her two or three times a day for nursing until she resigns herself to accepting it. Even the most stubborn heifer can be made to raise her calf if you are persistent, though her accepting the calf may take two or three weeks of supervised nursing.

If she's hobbled and you give her a flake of alfalfa hay to eat at nursing time, she may stand relatively still for the calf to nurse. If she is still aggressively resentful, trying to butt it with her head or smash it into the fence or wall, restrain her during nursing time.

A stanchion or headcatcher works if it is in or near her stall or pen. You can give her a little hay or grain to eat while she's restrained or put a halter on her and tie her up. If she's only fed at nursing time, she'll more willingly concentrate on food while the calf nurses and be less intent on attacking it.

Usually after a couple of days of this supervision, even a stubborn heifer will let the calf nurse, and you no longer have to tie her. You may still have to supervise nursing for another day or so, but she won't try to harm the calf each time. Eventually you'll see clues that she's tolerating it. You may find her standing next to its enclosure and content to be near it rather than at the far corner of her pen ignoring it.

Once she starts to show a change of heart, mooing at the calf in its enclosure, licking it a

little while it nurses or worrying about it when you put it back into its own place after nursing, it's usually safe to leave them together. Observe them awhile, to make sure she won't harm the

calf. Even if she attempts to and you have to separate them again, it's only a matter of time until she accepts it. Once she begins to change her mind, you know she will raise that calf. **HW**



### Liberated woman

My husband and my first experience with an unmotherly mama was a Hereford heifer 46 years ago. She calved quickly and easily, then got up and marched off. The calf bawled, and she looked back once to see what had made that noise but kept going.

Her calf was not to be so easily deserted. He got to his feet and staggered after his departing mother, bawling plaintively. She didn't want anything to do with him, kicking at him when we herded her back. So we brought the calf in the house and fed him a bottle.

As I was drying the calf in the kitchen, my own young son needed a diaper change so I left the calf, which we named Tuffy, lying on towels. He'd been enjoying the towel rubbing and suddenly felt deprived; perhaps he thought that I, too, was suddenly deserting him. He lurched to his feet and wobbled after me into the living room, where I diapered my baby with the help of a blundering, slobbery calf I had to keep pushing away. Tuffy spent the night in the barn, after another bottle from us.

The next morning, we were awakened by his mother bellowing. She was standing by the gate, bawling her head off. She had a full udder and this may have triggered maternal yearnings; sometime during the night she must have realized she had a baby. We brought Tuffy to her, and she immediately began licking and loving him, and he went right to her udder to start nursing. As he was slurping milk, she was licking his little rear end quite roughly as if to say, "Where ya been all this time, kid?" From that moment on, they were a bonded pair. She was a perfect example of delayed reaction to calving. **HW**

