

# Focus on Forming Good Habits BEFORE Day 1

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A wise old vet once said: “Vaccinating dairy herds is certainly not a habit-forming endeavour”. Let’s face it – nobody enjoys jabbing animals with a needle. It is stressful for the animal, without adequate restraint can be dangerous for humans, and with so much to do on a daily basis, it often gets the “backburner” designation. Despite this, vaccination is an important component to the overall health and welfare of the herd, and getting it right at the start of life for EVERY CALF born is crucial.

There is ample research showing that in North America, over 36% of all dairy heifers contract at least one disease (mostly diarrhea or pneumonia) prior to weaning! <sup>1</sup> One could make the argument that, as an industry, calfhood diseases are near epidemic levels. I cite this not to start a controversy, but to highlight the fact that, despite recent advances in scientific understanding, along with development of better management practices and technological innovation, the level of disease in our future generation of milk producers remains at high levels.

When discussing vaccination, I always add a disclaimer: vaccination, though an important aspect of calf health, is only one piece of a complex and interdependent puzzle. Of equal or greater importance are factors such as:

1. Excellent colostrum management - all calves less than 6 (preferably 2) hours old get 4L of clean, high quality colostrum;
2. A balanced diet according to the calf’s needs;
3. Strict environmental and equipment hygiene;
4. Outstanding biosecurity;
5. Low-stress handling;
6. Adequate fresh air (ventilation);
7. And attentive care to detect disease at an early stage, along with specific, evidence-based treatment protocols.

Expecting a vaccine to overcome serious deficiencies in these areas is setting you up for disappointment. That being said, getting vaccinations is a vital component of the overall herd health picture. As always, your herd veterinarian is the expert in developing herd-specific vaccination protocols.

## Start Before Calving

As a way to improve the quality of colostrum produced by the herd, many studies would support vaccinating the dam pre-partum against the bugs that cause diarrhea in calves: rotavirus, coronavirus, *Clostridium*, and *E.coli*<sup>2</sup>. This practice ensures the cow’s colostrum will contain higher levels of the right antibodies that fight disease that are then transferred to the calf during her first meal. For the cow, adding a vaccine that will protect against the negative effects of *E.coli* mastitis in fresh cows is also a proven benefit<sup>3</sup>.

## The First Few Weeks of Life

The young calf presents a unique challenge when designing an effective immunization schedule. Vaccines at this stage of life are focused on preventing respiratory disease caused by viruses and bacteria. The aim is to have calves with protective immunity prior to times of high disease challenge (i.e. group changes, environmental stressors etc.). The focus for such young calves must

start with colostrum management – except when you get it right, it is difficult to promote a good immune response to injectable (intramuscular or subcutaneous injection) vaccines because of the interference that all of those good colostrum-derived antibodies can have. Indeed, experts have noted that vaccinating calves with injectable vaccines should not be done until 1-2 months of age minimum in calves with high levels of maternal antibodies<sup>4</sup>. Recently, research has shown that vaccinating calves with an approved intranasal vaccine can provide protection against disease in very young calves with high levels of potentially-interfering maternal antibodies<sup>5</sup>. These vaccines can also prime the immune system so that when the calf is vaccinated with a systemic product at a later date, her immune system has a stronger, quicker response<sup>6</sup>.

### **The Weaned Calf and Beyond**

In addition to ensuring that the young herd is protected against the bugs that cause respiratory disease, vaccinating the weaned calf ensures that her immune system is properly primed against the bacteria and viruses that cause abortions (think BVD, IBR, and Leptospirosis). The advent and adoption of modified live vaccines, vaccines that replicate like live viruses in the animal but do not cause disease, has vastly improved the quality and duration of immunity in dairy cattle. Using these vaccines properly in non-pregnant heifers ensures higher levels of protection against the bugs that could cause abortion. To ensure the whole population of heifers adequately responds to the vaccine, it is recommended that 2 doses of vaccine be administered prior to breeding.

### **Final Word**

Every dairy farm is unique in the disease challenges that they face. This is why no one vaccination protocol will fit every herd. This article was not designed to be a prescriptive or exhaustive description of vaccine schedules; rather, it should serve as a reminder of the importance that enhanced immunity has in the overall health picture of your herd. Again, your veterinarian is a scientist, as well as the expert on the health challenges that your herd faces – they know the bugs and when the risk is highest, and as such, they are a vital resource for designing a herd-specific vaccination protocol. Ultimately, when we work together, we can make vaccination a habit-forming endeavour!

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