



TECH BULLETIN

STRESSES OF VACCINATING CALVES AT BIRTH

Calves need immediate protection against disease because they are born with an immature immune system. The maternal antibodies found in colostrum help newborns to acquire immune protection. In some cases, however, the quality of maternal colostrum can become compromised, leaving the newborn without adequate protection and increasing its risk of disease - such as scours. To guard against this, producers may use additional measures like supplemental antibody products or vaccination. There are, however, pitfalls to early vaccination that can put calves at risk.

PROBLEM: Maternal antibodies can block a vaccine's effectiveness.

When the newborn calf drinks colostrum, maternal antibodies are absorbed from the calf's gastrointestinal tract into the blood stream. Absorption of these antibodies is called passive transfer of immunity. The problem is, when vaccinating calves at birth, high concentrations of maternal antibodies can suppress or interfere with the calf's immune response to a vaccine. This is because the maternal antibodies cannot distinguish between the antigens of a natural challenge and those in a vaccine. When this happens, the maternal antibodies neutralize the vaccine, rendering it useless so the calf does not receive the protection it needs to fight a scours threat.

PROBLEM: Vaccination may require delayed colostrum feeding.

Some scours vaccines currently on the market require a delay in colostrum feeding. This delay is necessary because, if the vaccine was administered at the same time as colostrum, it would be inactivated by maternal antibodies in the colostrum, defeating the purpose of the vaccine. Not only that, but any delay in feeding colostrum increases a calf's risk of failure of passive transfer, which decreases its ability to fight disease.

PROBLEM: Vaccination is not immediate immunity.

Immunity obtained through a scours vaccine is not immediate because the newborn calf's immune system must respond to the vaccine and develop antibodies. This process can take days to weeks; the exact length of time varies depending upon factors related to the calf and the type of vaccine being given. During this lag-time the calf remains vulnerable to disease.

PROBLEM: Vaccination is a drain on the newborn calf's energy reserves.

The newborn calf is subject to many stressors at birth. Vaccinating around periods of stress can negatively influence calf growth and health. Newborn calves are particularly at risk because they are born with only a small reserve of body fat. Mounting an immune response to a vaccine drains this precious energy resource, diverting energy and nutrients from body maintenance and growth. This can have negative consequences on calf performance, and if the energy shortage is severe enough, on calf health as well.

Solution: Deliver Immediate Immunity™.

Delivering First Defense® in bolus, gel or powder form immediately after birth is a solution for protecting calves against scours because it delivers specific immunoglobulins that calves can absorb immediately into the bloodstream. This provides antibodies that keep the calf's immune system from being depleted so it's better able to fight off scours. When a calf's immune system isn't depleted by early calfhood scours it's better able to fight off secondary diseases such as crypto and respiratory challenges. That means:

- ♦ **No waiting for the calf's immune system to produce antibodies.**
- ♦ **No interference with maternal antibodies.**
- ♦ **No delay in colostrum feeding.**
- ♦ **Less stress on the calf because she doesn't have to divert energy reserves from maintenance and growth to mount an immune response.**
- ♦ **The calf maximizes its genetic potential.**

