BOVIMUN NEO

VACCINE AGAINST NEONATAL CALF DIARRHEA

COMPLEX PROTECTION

Rotavirus • Coronavirus
E. coli • Cl. perfringens type C

BioTestLab®

www.biotestlab.ua | info@biotestlab.ua

NEONATAL CALF DIARRHEA (NCD)

Neonatal diarrhea is the most common cause of morbidity and mortality in pre-weaning calves worldwide.

Diarrhea is characterized by damage to the gastrointestinal tract. Clinical manifestations vary depending on the type of pathogen and the influence of etiological factors. **Typical symptoms of the disease:** diarrhea, sometimes with mucus and blood in the feces, dehydration of the body, exhaustion.

6-12%

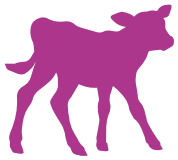
- this is how much body fluid a calf loses per day during severe diarrhea. A degree of dehydration of more than 12% provokes shock and death of the animal.

The risk of developing diarrhea varies over time. The maximum is during the second week after birth. However, the mortality rate is higher if the disease occurs in the first seven days of life[1,2].

Diarrhea is most often caused by rota- and coronaviruses, *E. coli*, and protozoa of the *Cryptosporidium* species. The type of causative agent will tell you when diarrhea occurs.

Pathogen	Age, days
E.Coli	1-7
Salmonella	1-28
Cl. perfringens	1-90
Rotavirus	4-14
Coronavirus	5-30
Cryptosporidium	5-28
Coccidia	21+

PREVALENCE OF DIARRHEA IN NEWBORN CALVES



28,8% dairy cattle

14,6% beef cattle

IMPACT OF NCD ON ANIMAL HEALTH AND PRODUCTIVITY

DIRECT LOSSES

Death of calves — High mortality rate of newborn calves **— up to 25%**[3]

Treatment costs — Complex therapy, including antibiotics, NSAIDs, immunostimulants, solutions of electrolytes and vitamins

INDIRECT LOSSES

Reduced growth rate — The risk of death during the growing period **is 2.4-2.9** times higher[4]. Decrease in average daily growth[5]

Decrease in milk production — **-340 liters** of milk in the first 305 days of lactation[6]

Delay of the first calving — **2.9 times** more likely to calve after 29 months of age[7]

Higher risk of infectious diseases — Development of antimicrobial resistance[8]

PREVENTION PROGRAM

THREE STEPS OF SUCCESSFUL PREVENTION

1 Vaccination of pregnant cows

Calving

2 Colostrum collection and storage

3 Feeding calves

COLOSTRUM FEEDING TECHNOLOGY

Important preventive measures are quality control of colostrum from vaccinated cows and the feeding regimen of calves. The amount of colostrum, antibody levels, storage conditions, time of the first feeding, and the frequency of subsequent feedings require special monitoring.

BASIC MONITORING

Sufficient amount of colostrum — at least 10% of the calf's body weight

Quality — colostrum tests for mastitis and IgG content

Temperature — 35-40 °C immediately before feeding

COLOSTRUM BANK

Colostrum from vaccinated cows, obtained in the first 6-8 milkings after calving, is recommended to be stored refrigerated (+2-8 °C) or frozen.

It is not allowed to use colostrum from cows suffering from mastitis, leukemia, etc.

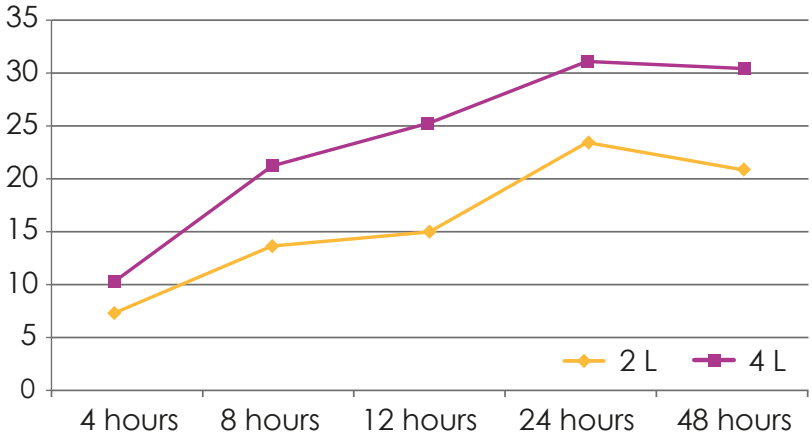
Colostrum frozen at a temperature of -18-24°C can be stored for up to 6 months.

Colostrum is heated or thawed at a temperature not exceeding 42 °C.

TIMELINESS OF FEEDING

Recommended scheme:
4 L in the first 6 hours, then:
2 L/12 hours x 3 days or as long as possible

Plasma IgG concentrations in calves fed 2 or 4 L of high-quality colostrum (60.1 mg IgG/ml) at birth and a further 2 L at 12 hours of age



It is recommended to collect colostrum from cows of the second and higher lactations. Such colostrum has a higher level of immunoglobulins and a variety of antibodies to various pathogens.

High-quality colostrum — with an IgG content of ≥50 mg/ml.

It is measured using a colostrometer (a 250 ml colostrum sample is required to determine antibody levels).

BOVIMUN NEO

INACTIVATED VACCINE AGAINST NEONATAL DISEASES OF CALVES

One dose of vaccine (2.0 ml) contains active components (before inactivation):

- bovine rotavirus, strain RP-182 ≥ 7.0 lg TCD_{50}
- bovine coronavirus, strain CV-315 ≥ 256 HAU
- *Escherichia coli* strain EC18 ≥ 9.0 lg CFU
- *Clostridium perfringens* type C, strain Cl.p.-19, toxoid ≥ 20.0 IU

Producer:
BioTestLab®

Available in doses: 5, 25, 50

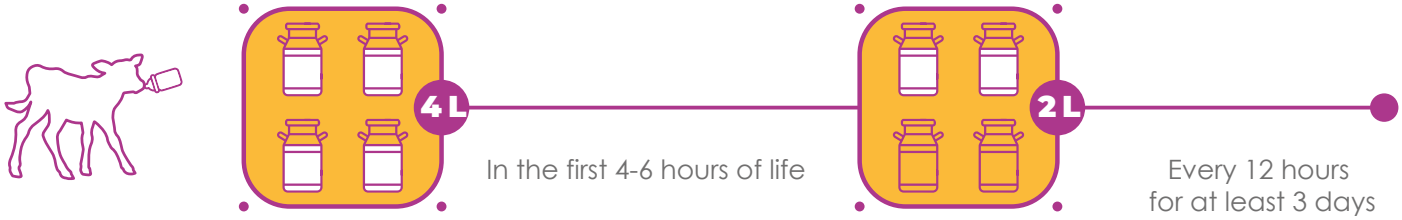
VACCINATION SCHEMES

For pregnant cows (heifers): **2 ml/head,** intramuscularly into the rump, with an interval of **3 weeks**

Primary vaccination

Revaccination (annually)

COLOSTRUM FEEDING SCHEME



Collected colostrum is recommended to be fed to each calf during the first two weeks of life (2.5-3.5 l/day). To store colostrum, use new clean 1-1.5 liter bottles.
Nipples, buckets, and probes are kept immersed in a container with a disinfectant solution.

1. Virtala AMK, et al. (1996) Morbidity from non respiratory diseases and mortality in dairy heifers during the first three months of life. J Am Vet Med Assoc; 208 (12): 2043—6.
2. Wells SJ, et al. (1996) Health status of preweaned dairy heifers in the United States. Prev Vet Med; 29: 185—99.
3. Couture Y, Major RR (1989) Resultats sur la mortalite des veaux de type boucherie de la region Abitibi-Temiscamingue. Les principaux problemes de sante chez le veau. Quebec: Ministere de l'Agriculture, des Pecheries et de l'Alimentation du Quebec.
4. Gulliksen SM, Lie KI, Løken T, Osterås O. (2009). Calf mortality in Norwegian dairy herds. J Dairy Sci; 92(6): 2782 – 95.3. Gulliksen SM, Lie KI, Løken T, Osterås O. (2009). Calf mortality in Norwegian dairy herds. J Dairy Sci; 92(6): 2782 – 95.
5. Donovan GA, Dohoo IR, Montgomery DM, Bennett FL. (1998). Calf and disease factors affecting growth in female Holstein calves in Florida, USA. Prev Vet Med; 33: 1 – 10.
6. Svensson C, Hultgren J. (2008). Associations Between Housing, Management, and Morbidity During Rearing and Subsequent First-Lactation Milk Production of Dairy Cows in Southwest Sweden. J Dairy Sci; 91: 1510 –18.
7. Waltner-Toews D, Martin SW, Meek AH. (1986). The effect of early calfhood health status on survivorship and age at first calving. Can J Vet Res; 50(3): 314 – 7.
8. Stilwell G, Carvalho RC. (2011). Clinical outcome of calves with failure of passive transfer as diagnosed by a commercially available IgG quick test kit. Can. Vet. J., 52, pp. 524-526