USE OF ECOLOGICALLY PURE SUBSTANCES IN REARING OF PRERUMINANT CALVES

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Introduction: Newborn calf may deal with different situations requiring digestive adaptations. Usually digestive disorders result in diarrhoea. In Russia often technological stresses (infringements of feeding and rearing regime, hygiene, etc.) of dairy breeds cause 100% morbidity of neonatal calves. In the alarm phase the sympatho-adrenal system of organism is excited resulting in blocking of parietal cells secretory activity in the abomasum. Colostrum poorly processed and inseminated with environmental micro flora is emptied into duodenum. E.coli bacterial numbers are increased 5 to 10,000 fold in the small bowel of calves with naturally acquired diarrhoea. Our experiments on operated calves with π-shaped duodenal cannulae [1] showed diarrheic calves to have achlorhydria, abomasal chyme pH 5.0-6.0 (measurements were made every 2 h. during the 24 h.). We also reported earlier acetate-ion to be a potent stimulant of abomasal HCl secretion [2].

Materials and methods: 286 healthy born Holstein calves were observed since the birth (BW 34.1±4.7 kg) up to 30 days. Just after calving neonates were kept separately.

All calves were randomly divided to three groups. Diarrheic calves of the control group (CG) were treated symptomatically using the antibiotics (neomycin IM, chloramphenicol and chlortetracin P0). Instead of colostrum (milk) they received saline. In case of diarrhoea animals of the experimental group 1 (EG1) were treated according to scheme: one meal was missed, instead of colostrum sick calf was fed the same volume of saline; next meal sick calf was given 1L of 3% sodium acetate aqueous solution (SAAS); sodium acetate was added to colostrum in the dose of 20 g/L for two days.

Calves of the experimental group 2 (EG2) were made for prophylaxis of incidence of diarrhoea. During 2-10 days of life each animal was given 1L 1% SAAS in an hour after prandial feeding.

Results: Group EG2 had diarrheic calves 5.6 and 2.3 folds less than CG and EG1 respectively, and showed the higher BW gain. Cases of relapses were 7.3% against 86.4 and 88.6% for CG and EG1. Nobody of EG2 died and suffered from respiratory diseases.

Conclusions: SAAS is effective and ecologically pure for treatment and prophylaxis diarrhoeas of newborn calves.

References: