**Composition:** Each 100 cc contains 20 grams of mannose and other monosaccharide sugars; 0.85 grams of sodium chloride, natural trace essential minerals from sea salts, buffered with sodium salts of organic acids and purified water.

**Action:** The principle of this monosaccharide solution is based on research which showed normal bacterial flora utilized monosaccharide metabolites to naturally inhibit pathogenic bacteria of the skin and mucous membranes. Further research demonstrated that these monosaccharide sugars and their metabolites may be used to inhibit common pathogenic bacteria and fungi of the reproductive tract of mares. Research by other workers has confirmed that specific sugars can indeed prevent pathogenic bacteria from infecting mucosal and epithelial cells of the reproductive tract of mares. Also, it has been proven that adequate sodium is essential for optimum reproductive fertility. An increase in sodium in the cervico-vaginal mucus is required during estrus for high conception rates. A deficiency in sodium increases infertility and embryonic mortality. UterineAde solutions contain natural sodium sea salts.

**Indications:** For post foaling or aborting infected mares, the product may be used with other fluids and antibiotics. For the most efficient use of the product, other fluids such as saline lavage solutions may be used to remove debris from the uterus. After the debris and fluid are removed, infuse the uterus with undiluted UterineAde. UterineAde will promote the contraction of the uterus and will aid in clearing the uterus of excessive fluid. Use UterineAde daily until the uterus returns to normal.

**Dosage and administration:** For post-foaling and infected mares, 100 to 500 cc intrauterine, undiluted, per day, repeat daily until infection clears. For mares to be bred, 60 to 100 cc per day on the first day of estrus, repeat daily if necessary. Do not use the day of breeding. May be used 24 to 48 hours post-breeding.

This protocol will aid in the prevention of venereal bacterial infections. This product has been formulated to be used without antibiotics. However, systemic antibiotics and other conventional treatments are recommended in addition to UterineAde if post foaling or aborting mares are infected with pathogenic microorganisms to aid in the prevention of septicemia and laminitis.
Although UterineAdé can be used without antibiotics, it can also be used in conjunction with antibiotics to aid in the healing of lesions while neutralizing microbial organisms. UterineAdé will neutralize the microbial organisms if the bacteria are resistant to the antibiotics and may also allow antibiotics to be more effective. UterineAdé not only will neutralize pathogens, but has the added benefit of healing lesions in the uterine mucosa.

**Caution:** For veterinary use only. Not to be used on animals intended for food. Keep out of the reach of children.

**Side effects:** There are no known side effects.

**References:**


**Mechanism of action for intrauterine sugar solutions**

**Scientific Literature**

Monosaccharide sugars have been shown to be effective in inhibiting bacteria that commonly infect the genital-urinary tract of mares. One of the benefits of sugars is that they can be used alone or with antibiotics to treat uterine infections in mares. Specific sugars can inhibit bacterial adherence to the equine endometrium in vitro. Mannose and N-acetyl-D-galactosamine inhibited adhesion of Escherichia coli and Pseudomonas aeruginosai to epithelial cells, whereas only mannose inhibited adhesion of Streptococcus zooepidemicus. In horses with uterine infections, use of sugars to competitively displace bacteria from attachment sites on cells may provide an adjunct to antibiotic treatment.

Bacterial adherence to cell surfaces and phagocytosis of bacteria is important as it relates to pathogenicity of various strains of bacteria which are common causes of uterine infections including Escherichia coli, Pseudomonas aruginosai, Streptococcus zooepidemicus, Salmonella spp., and other bacteria. The adherence of bacteria is inhibited by sugars such as L-fructose and D-galactose, which suggest that sugar-mediated adherence is widespread. The intercellular recognition is thought to be mediated by sugar residues such a D-mannose on the surface of cells to which bacteria attach by sugar-binding substance of their surface. The nature of the receptors is unknown, but there is evidence that bacteria, like E. coli produces lectin-like substances specific for D-mannose, by which it binds to the cells.