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Effect of Lactobacillus acidophylus, Lactobacillus fermentum, Lactobacillus paracasei subs. Paracasei and Enerococcus faecium on horses digestive system

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Introduction:

This study is aimed at the effect of probiotic cultures Lactobacillus acidophylus, Lactobacillus fermentum, Lactobacillus paracasei subs. Paracasei and Enerococcus faecium on horses digestive system. These cultures can nonspecifically activate the immune system, suppress reproduction of pathogenic and conditionally pathogenic microorganisms and reduce the influence of the procarcinogenic substances which can be generated during certain digestive processes and enzymatic activities of the microorganisms in the colon.

The horses digestive system is very subtle system that answers rapidly not only to any imbalance in feed ration, breeding system, climatic changes, but also to administration of therapy or transport stress.

Method:

Clinical trail of the veterinary medical product PROFOAL tabl. a.u.v. was aimed to check the effect and safety of its use and was done on target animals (on 10 horses from horse-rider club SLAVIA SPU Nitra). Before the first use of the medical product the individual faecal samples were taken and bacteriologically tested to count the present amount of lactobacilli, clostridia and enterococci. The preparation was given to the animals in the dose of 4 tabl. (12 g) daily during 12 days. The day after the last dose was given the repeat faecal samples testing was done with further bacteriological investigation. The detected amount of lactobacilli, clostridia and enterococci which was found before and after the use of the preparation was compared

Results:

Horses	Before the Theraphy			After the Theraphy		
CAVALO	Lac.: 8,0 x 10^6/g	Clos.: 4,2 x 10^3/g	Enter.: 3,3 x 10^5/g	Lac.: 1,4 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 2,9 x 10^6/g
RAPOLLO	Lac.: 4,4 x 10^6/g	Clos.: < 10 KTJ /g	Enter.: 2,6 x 10^5/g	Lac.: 3,7 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 1,0 x 10^7/g
ROCKY	Lac.: 4,0 x 10^6/g	Clos.: < 10 KTJ /g	Enter.: 1,0 x 10^5/g	Lac.: 1,2 x 10^8/g	Clos.: <10 KTJ /g	Enter.: 7,7 x 10^6/g
CARIS	Lac. 6,8 x 10^6/g	Clos.: 3,0 x 10^2/g	Enter.: 3,0 x 10^5/g	Lac.: 5,6 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 1,1 x 10^7/g
CALINESTA	Lac.: 5,4 x 10^6/g	Clos.: 2,1 x 10^2/g	Enter.: 2,7 x 10^5/g	Lac.: 3,0 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 9,2 x 10^6/g
BALERINA	Lac.: 1,4 x 10^7/g	Clos.: < 10 KTJ /g	Enter.: 1,1 x 10^5/g	Lac.: 2,1 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 1,3 x 10^7/g
CORDOBA	Lac.: 2,8 x 10^6/g	Clos.: 9,0 x 10^3/g	Enter.: 5,3 x 10^4/g	Lac.: 3,0 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 1,1 x 10^7/g
SILVERSTONE	Lac.: 2,6 x 10^7/g	Clos.: 3,0 x 10^3/g	Enter.: 4,0 x 10^5/g	Lac.: 9,6 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 1,6 x 10^7/g
CHICAGO	Lac.: 2,2 x 10^7/g	Clos.: 2,0 x 10^4/g	Enter.: 3,9 x 10^5/g	Lac.: 3,6 x 10^8/g	Clos.: < 10 KTJ /g	Enter.: 9,6 x 10^6/g

The results of bacteriological investigation clearly showed that the use of probiotic product PROFOAL increased the amount of Lactobacilli in the faeces up to 2 logarithms and amount of enterococci up to 1 logarithm. It is very important that in the horses who had Clostridium in the faeces before taking the preparation the same bacteria were almost not found after the use of probiotics / they were under detectable level within 1 – 3 logarithms /. For example, before the use of probiotic preparation the highest level of Clostridium was detected in case of the horse CHICAGO /2.0x10^4/g /. After the use of preparation the amount of Clostridium fell under the detectable level which means 4 logarithms less.

This result supports the assumption that use of probiotics which contain lactobacillus prevent reproduction of Clostridium in the digestive tract of the animals. Lactobacilli are antagonistic microorganisms towards Clostridia. Clostridia are conditionally pathogenic microorganisms which are normally present in the colon of the animals. In appropriate conditions, mainly in case of raised pH of the digestive tract, they can overgrowth. Lactobacilli produce organic acids / lactic acid, propionic acid, butyric acid/ which decrease pH in the gut and in such way prevent the overgrowth of opportunic microorganisms such as clostridia, E.coli, staphylocoocci, listeria, salmonella.

Generally the use of preparation will improve the digestive process and it will lower the toxic influence on liver and kidneys. The general clinical condition of the horses was good before, during and after the finishing of the use of the preparation PROFOAL

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