THE PROPHYLACTIC EFFECT OF GROWTH PROMOTERS ON NONSPECIFIC DIARRHOEA

MONICA PARVU*, ELENA POTECEA*, V. ANDRONIE*, CRISTINA DINU*, A MARMANDIU**

*Universitatea „Spiru Haret", Facultatea de Medicină Veterinară
**USAMV Bucureşti, Facultatea de Medicină Veterinară

Summary

The experiment was conducted on 72, Synthetic Line Peris 343 piglets, from 9 sows. The piglets of group V1 received 3 ml Multigerm/piglet/day until the prestarter compound feed was given to them. The piglets from the experimental group 2 (V2) received 3 ml of the biopreparation per os when the diarrhoeic states appeared. In the suckling piglets **Multigerm** had a prophylactic effect against the states of unspecific diarrhoea when given per os during the first 8 days and than included 3% in the dietary vitamin-mineral premix and a curative effect when given in amount of 3ml per os, being an alternative to the antibiotics treatment.

The use of antibiotics was restricted in animal feeding or even banned in many species and production categories.

The existence of a normal and balanced intestinal microflora is of particular importance for the piglets, protecting them against pathogens. A quite small number of microorganisms are use by most live microbial preparations used in compound feeds formulations: *Lactobacillus, L. acidophilus* particularly*, Streptococcus faecium, Bacillus,* yeasts *Sacharomyces cerevisiae.*

The use of growth promoting preparations in animal feeding has both direct and indirect effects. Among the indirect effects is diet acidification, the release of antibiotic substances and of other metabolites with antibacterial action, enzymatic effects, immunomodulating effects, effects of competitive exclusion of the pathogen flora.

The indirect effects, whose mechanisms are yet to be elucidated, bear on the intestinal passage, the ecological protection of balancing the endogenous flora, the sanitary-veterinary state.

Materials and methods

The microtest was conducted on 172, Synthetic Line Peris 343 piglets, from 19 sows. The supplementary feeding started at the age of 8 days. The piglets of the control group received a prestarter compound feed that provided the dietary nutrients according to the feeding norms (Stoica, 1997). The piglets of group V1 received 3 ml Multigerm/piglet/day until the prestarter compound feed was given to them. The piglets from the experimental group 2 (V2)

received 3 ml of the biopreparation per os when the diarrhoeic states appeared. Multigerm is a polyculture of selected lactic acid bacteria belonging to Lactobacillus (L. plantarum, L. acidophilus) and Enterococcus (E. faecium) genera.

Table 1 shows the experimental design.

Table 1

Experimental design

Group	Treatment
C	Antibiotc, curative purpose
V1	Probiotic, 3 ml per os during the first 8 days, then 3% in the vitamin-mineral premix (until weaning)
V2	Probiotic, 3 ml per os, when nonspecific diarrhoea appeared

The suckling piglets were housed in farrowing pens together with the sow. Piglets was weaned at 35 days. To alleviate the weaning crisis, piglets were offered a compound feed starting with the day 8 of life. In the first day the prestarter formulation was offered in small amounts, in front of the feeders; in the following days the compound feed was put into the feeders.

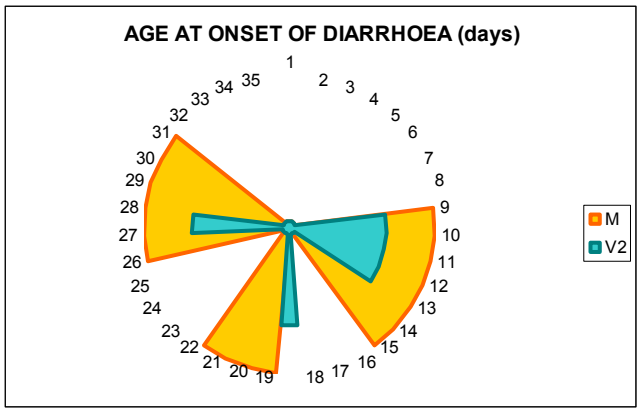
Results and discussions

The piglets of the control group displayed clinical diarrhoea signs starting with the ninth day after farrowing and were treated systematically, only when the diarrhoea appeared, with an current antibiotic (IM). The diarrhoeic states appeared at the age of 19 and 26 days. The diarrhoea remitted after 5-7 days of treatment with Streptomycin but it appeared again at later ages (graphic 1). The severity of the diarrhoeic states was high.

The piglets from group V1 received 3 ml biopreparation/animal/day until the age of 8 days; after that age, the biopreparation was incorporated into the vitamin-mineral premix of the starter feed. It was observed that the use of Multigerm biopreparation had a prophylactic effect because the diarrhoeic states not appeared in experimental period. The literature shows that the use of growth promoters in suckling piglets and sows feeding and their prophylactic inoculation depressed of cancelled the emergence of diarrhoeic states. (Soare, 1998, Pană, 2000).

In group V2, in which the piglets were treated with 3 ml Multigerm/animal/day immediately after the diarrhoea appeared until remittance, the disorder appeared on days 9 (after the supplementary feeding was introduced). Diarrhoea remittance was after 3 days of treatment with the growth promoter. The diarrhoeic states appeared again on days 18 and 27. The remittance was after 2 days of treatment. This proved the curative effect of Multigerm.

Graphic 1.



In the control group morbidity was 52% and mortality was 24%. In group V1, treated as prophylaxis with Multigerm, there were no recorded cases of morbidity and mortality. In group V2, treated with Multigerm for curative purposes, morbidity was 35% but there were no mortalities. This shows that the biological preparation restored the gut microbial balance, the curative effect being shown by enterocolitis control.

Table 2

Morbidity and mortality

Group	Piglet litter	Morbidity	Mortality	Anatomopathological alterations
M C1	8	5	3	Catarrhal enteritis Hemmoragical enteritis
M C2	8	4	2	
M C3	9	4	1	
E1 C1	9	-	-	-
E1 C2	9	-	-	-
E1 C3	8	-	-	-
E2 C1	8	4	-	Catarrhal enteritis

Conclusions

In the suckling piglets **Multigerm** had a prophylactic effect against the states of unspecific diarrhoea when given per os during the first 8 days and than included 3% in the dietary vitamin-mineral premix (until weaning).

In the suckling piglets **Multigerm** had a curative effect against the states of unspecific diarrhoea when given in amount of 3ml per os, being an alternative to the antibiotics treatment.

The used of probiotic preparation as prophylactic treatment shows that the morbidity decrease and the mortality is null.

The biological preparation restored the gut microbial balance, the curative effect being shown by enterocolitis control.

The prophylactic effect of probiotic was accentuated by the administration in the vitamin - mineral premix.

References

1. **Pană O.C.,** Biotehnologii în nutriția şi alimentația animalelor, Ed. Coral Sanivet Bucureşti, 2000, pg. 137 – 145.
2. **Soare Aurelia,** Testarea produsului Probios în hrana porcilor, Anale IBNA vol. XIX, Ed. Agris, Bucureşti, 1998, pg. 36 – 39.
3. **Stoica I.,** Nutriția şi alimentația animalelor, Ed. Coral Sanivet Bucureşti, 1997, pg. 413 – 417