

Development of Eubiotic Preparation for Domestic Livestock

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Animal feeding is a key element in cost-effective production. beneficial effects can be achieved with wholesome feeds based on high quality roughage and nutritious fodder, vitamin and mineral additives. Yeast are industrially interesting microorganisms. Their dry weight is composed of lysine- and threonine-rich protein in 35-65%. Yeast are a rich source of B-complex vitamins and ergosterol. They contain fat and carbohydrates which give them high energy content. They are also easily digested.

Herbs are also functionally interesting. Their preparations contain beneficial substances, such as flavonoids, anthocyanines, glycosides, tannin and tannines, secoiridoids, mucilage, essential oils, alkaloids, polyphenols and mineral salts. These compounds have antistress, antibacterial, antiviral and antifungal properties stimulate the appetite of livestock and help maintain physiological balance. Oils of thyme, basil and cumin enhance appetite; stimulate secretion of bile and digestive enzymes, and intestinal motility, which improves assimilation of nutrients. Thyme, basil, cumin and camomile oils show activity against pathogenic bacteria, including *Clostridium perfringens* and *E.coli*.

The aim of this work was to develop a multifunctional eubiotic preparation composed of two species of yeast and a herbal complex. Fed-batch cultures were conducted in 6.6 L bioreactors. Glucose, molasses, sucrose, whey and corn steep liquor were investigated as substrates. Growth of biomass, substrate utilization and concentration of metabolites were monitored. Kinetic indicators were calculated in order to allow comparison of substrates. From various tested herbal additives, garlic, oregano and thyme extracts were selected based on the results of antioxidant potential and antibacterial activity. Addition of these extracts can improve digestion, nutrient assimilation and immunity of farm animals.

This work is the result of cooperation with BAF Inc. for the purpose of the project entitled "Development of a novel recipe and production process of a eubiotic preparation containing two symbiotic yeast species". Research was financed by POIR.02.03.02-30-0047/17.

Biography:

Aleksandra Wanczyk is a graduate with a Master's Degree in Biotechnology at Poznan University of Life Sciences in Poland. She is currently working as a microbiologist at the Department of Biotechnology and Food Microbiology of Poznan University of Life Sciences. Her research interests are in the field of yeast biotechnology.