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MODELLING AND CONTROL OF THE INFECTION PROCESSES IN INDUSTRIAL PIGBREEDING

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One of the important branches of the agriculture is industrial pigbreeding. But the productivity of the animal populations strongly depend on the health of animals. The epizootics and immune problems are one of the limiting factors for pigbreeding, especially for post-Tchernobyl situation in Ukraine.One of the ways to overcome this difficulties is to apply the methods of mathematical modelling and controls.

In this report there will be some results in this directions. There are planned to consider such problems :

1. The modelling of nidus of infections in big pigbreeding complexes and measures of stop the epizooty. The control of veterinary measures and the optimizations of expenditure. The spreading of epizooties in the environment of big complexis.
2. The modelling the viruses infections in the animals cell and the testing and control of medicamental substances influences on the diseases.

The models for such goals are the partial differential equations for infections spreading, ordinary differential equations for infections in cells and neuronet models for the estimation and prognoses of some types of influences on epizooties. There are aslo planned to consider some cost optimization problems in the processus of epizooties liquidation.

Besides the theoretical problems it is planned to consider some pratical problems and results on the basis of date for Ukrainian pigbreeding.

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