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The epidemiological and ecological features of pseudomonas infection in Ukraine

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Introduction

With regard to bacteria that utilize quorum sensing as part of their pathogenic lifestyle, *Pseudomonas aeruginosa* is perhaps the best understood in terms of the virulence factors regulated and the role quorum sensing plays in pathogenicity.

Recent intensification of agricultural production, construction of large animal's complexes acquired special urgency, so-called factorial disease, the etiology of which involves different conditionally pathogenic microorganisms.

Particular importance in this respect belongs to bears *Pseudomonas aeruginosa* due to its extreme resistance to many antibiotics and a long experience in the environment.

This microorganism previously considered opportunistic is now gaining a leading role in the development of both local and generalized inflammatory processes in humans and animals.

Materials and methods

Analysis of epizootic situation for pseudomonosis of pigs and cattle in Ukraine is based on veterinary reporting of the State Veterinary and Phytosanitary Service of Ukraine for the period from 2003 till the present and also on the basis of the published literature.

Results

Probably the important factor to spread of infection is the concentration of pathogenic microorganisms in animal manure. The ability of pathogens to survive for long periods and through treatment to remain infective in the environment until ingested by human or animal host is an additional concern.

The methods of breeding, housing and feeding domesticated animals vary from species to species and differ according to custom and in accordance with geographical and climatic conditions. In temperate zones cattle, poultry and pigs are housed and sheep are allowed greater freedom whereas in tropical regions cattle have a limited amount of shelter which is designed to shield them from the sun; in more northerly climes cattle and sheep may be kept in confined areas for some months of the year. These conditions play a great part in the ease or difficulty with which bacteria are spread and it is therefore impossible to generalize on the methods of spread of bacteria of veterinary importance; this is still further complicated by the variation in the survival time of the different bacteria outside the animal body under different external environments.

Based on the data in the chart, the process of epizootiology for pseudomonosis of cattle and swine is characterized by sporadic outbreaks or slowly spreading enzootic.

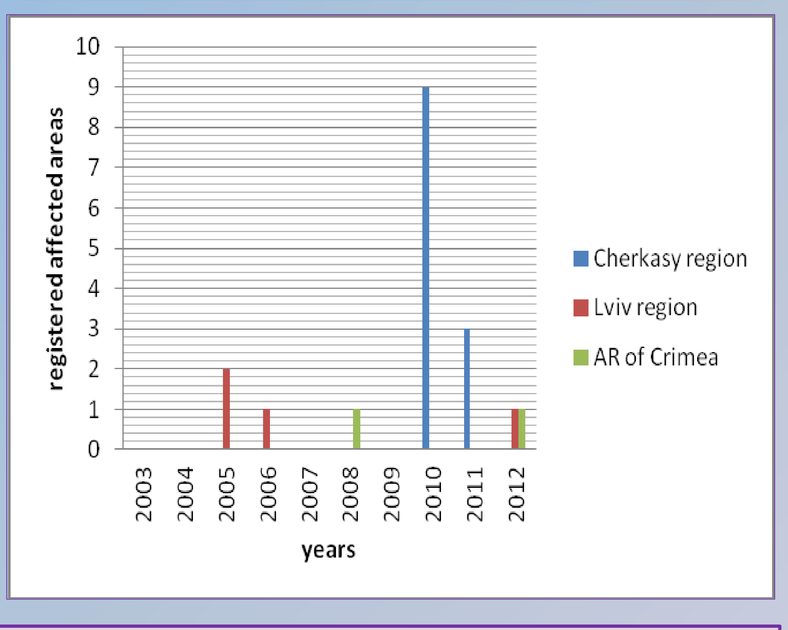
Some indicators of epizootic process for pseudomonas infection of swine and cattle in the different regions of Ukraine.

Regions of	Amount of infected areas in Ukraine 2012	Amount of infected for pseudomonosis areas over the 10 last years	Episootiology Index
Cherkasy region	-	9	0,9
Lviv region	-	3	0,3
The Crimea	1	2	0,2

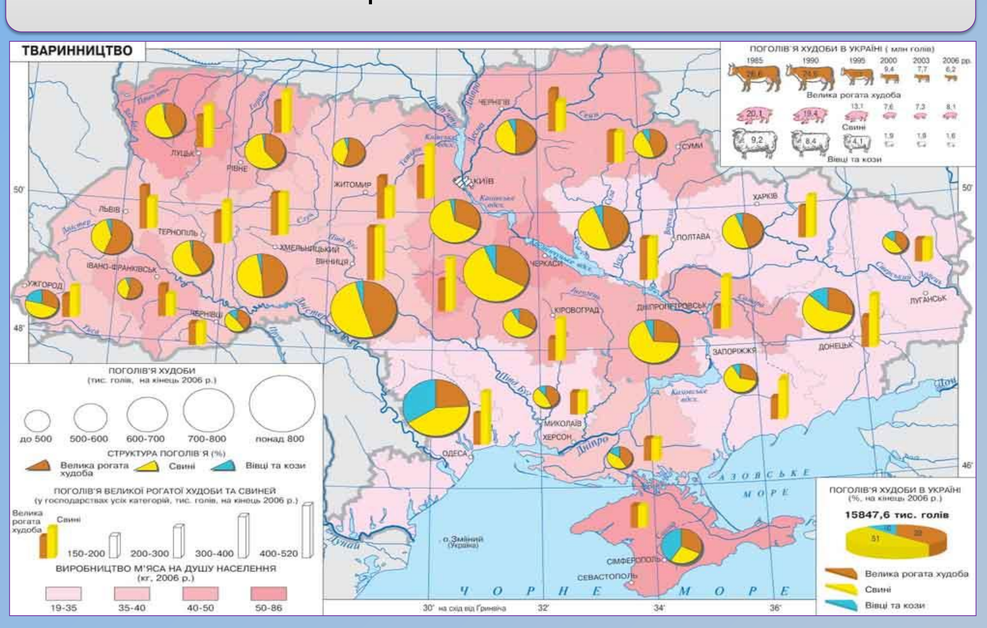
Number of epizootiology Index for infected pseudomonosis areas over the last 10 years Cherkasy - 0.9, Lviv - 0.3, The Crimea 0.2.

The high rate of positive results in the Cherkassy region can be explained by the fact that a significant number of animals concentrated in fairly small areas near industrial centers in the form of large cattle and pig farms

Collation of the infected areas of pseudomonosis cattle and swine in the regions of Ukraine from 2003 to 2012.



The map of livestock in Ukraine



Conclusions

Over the past 10 years infected areas for pseudomonosis of swine and cattle are registered on the territory of Ukraine in Cherkasy, Lviv regions and the AR of Crimea. With the episootiology index 0.9 in Cherkasy region; 0.3 in Lviv region; 0,2 in the Crimea.

Most animals have *P.aeruginosa* infection in the autumn-winter period in all probability, due to the deteriorating conditions and feeding animals, reduced animal health indicators.

Climatic and geographical factors, different areas of the country do not have a pronounced effect on the rate of infection of animals P.aeruginosa.

The source of the pathogen is sick animals or animal bacilli carriers, contaminated by microorganisms feed, water and even staff.

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Literature cited

1. Державна фітосанітарнf служба Україні http://vet.gov.ua
2. Bicudoa J. R. & Goyal S. M. Pathogens and manure management systems: A review. p.115 - 130. Environmental Technology, volume 24, issue 1, 2003.
3. Марченко Татьяна Витальевна. Биологические свойства Pseudomonas aeruginosa выделенной от животных, из кормов и объектов внешней среды в Краснодарском крае : Дис. к.в.н : 16.00.03 Краснодар, 2006 167 с.
4. Смирнов В.В., Киприанова Е.А. Бактерии рода Pseudomonas К.: Наукова думка, 1990. - 264 с.
5. Панікар І.І., Скрипка М.В. Біологічні властивості збудника псевдомонозу птахів та його чутливість до антибіотиків // Вісник Полтавського ДСГІ.- 1998.- №1. С. 40-41.

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