

ISWAVLD 2

International Symposium of the World Association of Veterinary Laboratory Diagnosticians

29 JUNE-1 JULY 2023 Congress Centre Lyon

Towards the veterinary diagnostics of the future

Main topic : Surveillance and control of emerging diseases

LEPTOSPIRA SEROVAR PREVALENCE IN CATTLE AND PIGS IN UKRAINE FROM 2020-2022

KRYTSIA Y. 1, HUDZ N. 1, TARASOV O. 1, OBOZNENKO N. 1, MELNICHENKO O. 1, NYCHYK S. 1

¹ Institute of Veterinary Medicine of NAAS, Kyiv, Ukraine

Introduction. Leptospirosis is a widespread disease that is endemic in many countries worldwide including Ukraine. It affects a variety of species of domestic animals, wildlife and humans; therefore, leptospirosis is classified as a zoonosis. In animal husbandry, it causes significant economic losses, so the disease is of veterinary concern. Updated data on Leptospira serovar prevalence is very important for veterinarians when choosing vaccines with specific antigen compositions for disease prevention.

Methods. From 2020-2022, a total of 504 serum samples: cattle n=225 from 9 Oblasts (Vinnytsia, Zhytomyr, Kharkiv, Poltava, Kyiv, Cherkasy, Mykolaiv, Zaporizhzhia, Khmelnytskyi) and pigs n=279 from 7 Oblasts of Ukraine (Mykolaiv, Kharkiv, Ternopil, Kyiv, Vinnytsia, Donetsk, Odesa) were collected from farms suspected to be affected by leptospirosis. Sampling was conducted by local veterinary doctors. Sera samples were tested using the microscopic agglutination test (MAT) with 18 reference Leptospira serovars. These diagnostic strains of Leptospira were

cultivated in the Laboratory of Leptospirosis at the Institute of Veterinary Medicine of the National Academy of Agrarian Sciences of Ukraine. The Leptospira were cultivated in a Korthof liquid medium at 28-30°C under aerobic conditions.

Results. Of the 504 serum samples tested, 173 were seropositive: 99 (44.00%) from cattle and 74 (26.50%) from pigs.

In cattle, polonica (66.70%) and kabura (53.50%) serovars were the most prevalent. The canicola (27.30%), bratislava (25.20%), grippotyphosa (24.20%), icterohaemorrhagiae (24.20%), pomona (22.20%), and tarassovi (19.20%) serovars were detected less often. Only 6 samples tested positive for the javanica serovar (6.10%).

In pigs, polonica (43.20%) and grippotyphosa (35.10%) were the most prevalent serovars. Bratislava (29.70%), icterohaemorrhagiae (28.40%), canicola (28.40%), and pomona (25.70%) serovars also had significant distribution among pigs. Less significant serovars in pigs were kabura (17.60%) and tarassovi (14.90%). Only 3 samples where positive for the shermani serovar (4.10%). **Conclusions.** The highest seroprevalence of Leptospira in cattle had polonica and kabura serovars which confirms data received by Pyskun A. et al in

2014-2015, though in our study period serovar bratislava was registered less often.

In pigs, the highest seroprevalence was for polonica and grippotyphosa serovars, which differs from the results published by Ukhovskyi V. et al. in 2001-2019, when the serovars copenhageni (33.91%), bratislava (14.14%), pomona (8.58%), and tarassovi (7.12%) dominated in the etiological structure of swine leptospirosis.

Available commercial vaccines provide serotype specific protection, so monitoring serovar prevalence will help to choose the most effective vaccines against leptospirosis. Low prevalence serovars can be excluded from vaccination compositions or replaced with others that are more frequently detected.

Screening for leptospirosis in animals should be conducted continuously to monitor the epidemiologic shift of serovars and inform vaccination programs and the spread of disease.