

was used to estimate the economic losses of the disease.

**Results:** The sero prevalence of the disease was ranged between 10-20 percent in the study farms. It was carried out an quantitative epidemiological and economic study to evaluation the epidemiology of the disease and economic losses caused by the disease. It was confirmed that there were strength significant association between the occurrence of the disease and advance ages of animals and increased the size of herd in individual farms. The economic losses resulted of the occurrence of the disease were estimated as individual level for a cow and generally on the farm level. The sero prevalence of the disease was ranged between 10-20 percent in the study farms. It was carried out an quantitative epidemiological and economic study to evaluation the epidemiology of the disease and economic losses caused by the disease. It was confirmed that there were strength significant association between the occurrence of the disease and advance ages of animals and increased the size of herd in individual farms. The economic losses resulted of the occurrence of the disease were estimated as individual level for a cow and generally on the farm level.

**Conclusion:** The study was concluded that there was an increase in the seroprevalence in advance ages in all regions study, this was because there was no vaccination program in all regions study. Biosecurity procedures should be taken in consideration in order to decrease the disease occurrence. The economic losses resulted from the disease reached to 4000 US\$ at the farm level and about 100,000 US\$ at the GOC level. Control strategies should be carried out in order to prevent the high prevalence level of the disease

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#### Clinical manifestations of leptospirosis

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**Background:** Leptospirosis is an acute generalized infectious disease which belongs to the zoonoses group. Leptospirosis mainly causes interstitial nephritis in animals, but people accidentally get infected in a direct or indirect contact with the urine of the infected animal. Our goal was to display the clinical manifestations in 150 hospitalized patients, treated at the Clinic for infectious diseases in Novi Sad during the past ten years.

**Methods:** A retrospective study of the clinical manifestations in patients diagnosed with leptospirosis, hospitalized on the Clinic for infectious diseases from the year 1999 to year 2000.

**Results:** Non icterous form of leptospirosis was found in 21,33% (32/150) patients; high body temperature with a generalized infectious syndrome was present in 43,75%; 8,33% of the patients had a high body temperature followed with severe hemolitical anemia; aseptic meningitis was present in 28,1%; gastroenteritis in 15,6%; bronchopneumonia in 6,25%; nephritis in 6,25% and pneumonia, aseptic meningitis and gastrointestinal bleeding joined simultaneously in

100% of the patients with Weil's syndrome had renal failure; 50% hemorrhagic syndrome; 45,8% neurological disorders (38,7% meningitis, 5,0% meningoencephalitis, 1,6% convulsions, 0,8% poliradiculitis); 43,3% atypical pneumonia; 21,2% gastrointestinal symptoms, 15,2% rash; 8,4% cardiovascular disorders; 6,7% sight impairment and 3,3% pancreatitis. In patients with a non icterous form of leptospirosis, no lethal outcome has been noted. Among the patients with Weil's syndrome the mortality was 16,1% (19) and 65% among the elderly patients over 60 years.

**Conclusion:** Clinical manifestations vary among the patients, from easy forms to severe multi organ forms of leptospirosis. The highest impact on the prognosis of the disease has the age of the patients, co morbidity (alcoholism), early corticosteroid therapy in patients with pulmonary symptomatology and early haemodialysis in patients with renal failure.

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#### Epidemiology of avian influenza viruses in wild birds in Mongolia

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**Background:** A combination of geographical features makes Mongolia an ideal location for understanding the epidemiology of avian influenza viruses in wild birds. There are four main migration routes (East-Asia/Australasia, Central-Asia/India, West-Asia/Africa and Mediterranean/Black-sea) passing through Mongolia. Around 391 species of migratory birds arrive in Mongolia. Mongolia also represents an important site for molting of Anseriformes.

**Methods:** Since 2006, we have collected 3950 feces samples and 150 tissue samples from wild birds during the active surveillance in Mongolia. Viruses isolated by the egg inoculation method, and RT-PCR, qRT-PCR and Neuraminidase inhibition test were used for subtyping. The confirmation of the isolated highly pathogenic avian influenza virus (HPAIV), and intravenous pathogenicity index (IVPI), phylogenetic analysis were performed by the OIE Reference Laboratory for HPAI at Hokkaido University, Japan. The confirmation of the low pathogenic avian influenza virus (LPAIV) isolates and phylogenetic analysis were carried out in the National Veterinary Research and Quarantine Service of Korea.

**Results:** In 2005 and 2006, 2 HPAIV (H5N1) were isolated from wild birds (*whooper-swan*, *bar-headed-goose* and *common-goldeneye*) at Erkhel and Khunt Lakes. These viruses were classified into the clade 2.2 so-called Qinghai

Lake-type. In May and August, 2009, 2 HPAIV(H5N1) were isolated from wild birds (*whooper-swan* and *bar-headed goose*) at Doitiin tsagaan and Duruu Lakes. These viruses were classified into the clade 2.3.2. The IVPI was high /2.97-3.00/. Also we isolated 21 LPAIVs in 2007 and 2008. The subtypes were H3N8(11), H4N6(4), H7N7, H7N9, H3N1, H3N2, H4N2 and H10N6. The viruses were related with the Euro-Asia lineage. In 2009, 7 LPAIVs were isolated from wild birds (*whooper-swan*, *ruddy-shelduck*, *Mongoliangull*, *mallard* and *gadwall*) in Central and Eastern Provinces. The subtypes were H3N8(3), H10N6(3) and H4N6.

**Conclusion:** We isolated 4 HPAIVs and 28 LPAIVs from wild birds in Mongolia genetically related to the Euro-Asian AIVs. All HPAI outbreaks were restricted to the wild birds in north-central Mongolia. The phylogenetic differences of the H5N1 isolates from 2005, 2006 and 2009 indicate that the role of the migratory birds in Mongolia in the AIV mutation should be clarified. Therefore, it is necessary to continue the research on avian influenza in Mongolia.

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#### Virological studies on migratory penguins captured in Brazilian southeast coast

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**Background:** The migratory birds represent the main vector of Orthomixovirus and Paramyxovirus in nature, spread among birds in temperate regions. They have been reported circulating among Antarctic penguins through serological surveys, especially in Adelie penguins (*Pysoscelis adeliae*) of eastern Antarctica. The Magellanic penguins (*Spheniscus magellanicus*) are distributed on the southern shores of South America. Their breeding colonies were distributed from the coast of Chile to the Peninsula Valdez in Argentina, on the southern tip of South America. This penguin performs migration to the north, and such shift is an annual event considered characteristic of the species. The birds breed in colonies north of its distribution, as in the southern coast of Brazil, where they stay in the winter. Some individuals have demonstrated irregular movements that may occur with or in large numbers, causing errant individuals. It is believed that for this reason this species have reached the Northeast of Brazil in 2008 and made an unusual situation.

**Methods:** We analyzed the presence of Orthomixovirus and Paramyxoviruses in penguins captured on the coast of the Espirito Santo state, Brazil, due to the increasing number of species in the region in 2008. Were inoculated into the allantoic cavity embryonated fowl eggs suspensions of 73 cloacal swabs taken from live migratory penguins at Brazilian Southeast Coast, between September - October 2008. The allantoic fluids were tested for haemagglutination activity (HA). In samples with positive HA, we performed hemagglutination inhibition (HI) test against antibodies to

H1N1, H2N2, H3N8, H7N7, and Newcastle disease virus (NDV). Neuraminidase activity (NA) assay was performed to characterized the isolates. Were performed a RT-PCR to protein M of Influenzavirus and L protein of broadly range of Paramyxovirus.

Sample	FMP(ua)	FMi (ua)	TI
NDV(+)	16394.46	444.89	41,34
56	23659,12	1273.81	18,57
60	25118,95	1893,23	13,26
64	25248.39	1343.51	18,79
66	25018,11	610.98	40,94
87	26148.81	2500	10,45
119	23635.86	1494,16	15,B1
129	26903.40	1890	14,23
439	25262.89	818.95	30,84

#### NA activity and inhibition by DANA of penguins isolates.

**Results:** Our results shown that 9 samples (12%), were positive by haemagglutination test, but no inhibition by influenza sera observed. Partial inhibition by NDV serum was observed in all samples. All samples presents NA activity. All samples amplified L protein gene of Paramyxovirus (Avulavirus), demonstrating a strong band of 500bp on agarose gel.

**Conclusion:** Our results shown that Avulavirus is present on these birds and may cause diseases on this species, contributing to clinical deterioration of the animals.

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#### Poultry farmers' response to AI outbreak and its control in Indonesia

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**Background:** AI outbreak in Indonesia had started since August 2003 up to now. GOI continuously try to control it by introducing 9 strategies on bio-security policies, for instance, vaccination, depopulation, transportation and trading of poultry products. Poultry industry development provides employment for villagers and it is very important for low income villagers, in particular poultry rearers in sector IV.

**Methods:** In order to observe socio economic impacts of AI outbreak in sector IV, survey had been implemented in three provinces in Indonesia in early 2008.

**Results:** Results indicated that in general farmers did not know the 13 symptoms as overall AI symptoms. Overall only 2.6 percent of the respondents knew all of the AI symptoms. This knowledge was very low and, therefore, they could not deal with AI outbreak properly. Overall, only 25.1 percent of the respondents knew all of the seven items relating with control measures as (i) stamping out, (ii) vaccination, (iii) spraying disinfectant (iv) isolation, (v) burning, (vi) compensation and (vii) provide antibiotic, while the rests knew only some of the items. The higher the disease attack the smaller the percentage of the respondents knew all items of AI outbreak prevention. Most farmers conducted vaccination (65.3 percent). Only few smallholders in West Java applied