International symposium, 13 October 2017

Epidemiological Surveillance of Trichinella spp. Infection in Animals in the Eastern Part of Romania (Moldova) and the Potential Risk of Human Infection

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Abstract. The epidemiological study on Trichinella spp. infection in animals in the Eastern part of Romania, during 2010-2015, was performed in order to shed some light on the species of Trichinella in domestic and wild animals, and the prevalence (E%) of the infected animals under veterinary and epidemiological surveillance.

Samples of striated muscle tissue from pigs, horses, wild boars and bears, were examined in veterinary and food safety laboratories in every county of Moldova through direct trichineloscopy and artificial digestion. The identification of Trichinella spp. was done in national (VPSII, Bucharest) and European (EURLP, Rome, Italy) reference laboratories by Multiplex PCR method.

There were examined a total of 128.738 samples of striated muscle tissue in pigs, of the 115.324 samples; in horses of the 5341 samples, in wild boar there were examined 8024 samples; in bear there were examined 49 samples.

Trichinella spiralis had the most prevalent species and have been identified in swine, wild boar and bear in Bacău, Vrancea, Buzău and Galați counties; in the Vaslui county, T. spiralis have been indentified in both, pigs and wild boar.

Trichinella britovi, have been identified in wild boar in Vaslui county (275 samples in which 1 were positive; E: 0.36%) and in bear, in Buzău county (12 samples in which 3 were positives; E: 25%); It also have been identified in both, wild boar and bear in Bacău and Vrancea counties.

The prevalence of Trichinella spp. in the animal population was 0.20% of which in pig: 0.11%; horse: 0%; in wild boar: 1.43% and in bear: 40.81%

Single Trichinella britovi infection had a prevalence of 0.42% in wild boar and of 15.55% in bear

Single Trichinella spiralis infection, had a prevalence of 0.001 % in pigs, in Neamţ county; in wild boar of 2.79 % in Iaşi county; in Galaţi county infection had a prevalence of 6.51% in all examined animals: pigs, wild boar and bear.

The high prevalence of Trichinella infection in the eastern part of Romania particularly in the game, confirms the presence of a well preserved sylvatic reservoir of the parasite, constituting a major risk of infection to humans and of dispersing to synanthropic animals, suggesting an increased attention of consumers that occasionally purchase meat or meat products without veterinary examination.

Keywords: Trichinella spp., prevalence, domestic and wild animals, risk of infection, Eastern Romania