



# Is boar population influencing on tick-borne diseases spread?

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## Objectives:

Tick-borne encephalitis (TBE), caused by tick-borne encephalitis virus, which is transmitted by the hard tick *Ixodes ricinus* is still a problem in Europe. In 1990–2007 in Europe, 157 584 cases were reported. In 1990–2007, there was an almost 320% increase in the incidence compared to the years 1976–1989. In Poland, the number of cases of TBE registered by the National Institute of Hygiene in 2012 was 189 cases, and in 2013 - 225 cases.

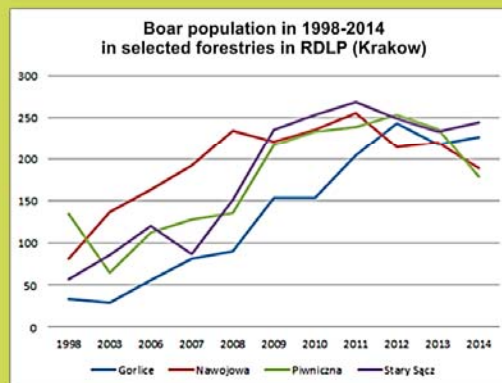
A significant increase in the incidence of TBE in the north-eastern Poland since 1993 has been observed. Podlasie region has the highest incidence of TBE – in 2012, 101 cases were reported, which represents 53.4% of all reported cases in Poland, and in 2013 111 cases, which represents 49.3% of all cases reported in Poland. Reasons of these phenomena may be various. One of them could be changes in wild animals population. Therefore we aimed to search for the relationship between wild animals population changes and increase in TBE incidence, based on boar population.

## Methods:

In the present study boar population in 5 counties: Siemiatycze, Hajnówka, Grajewo, Kolno and Białystok in 1995-2006 was analysed.

## Results:

In counties with the highest incidence of TBE: Białystok and Hajnówka two completely different trends in the number of boars were observed. Increasing trend in the number of wild boars was observed in Białystok area, in contrast to the county Hajnówka where downward trend was observed. No significant differences were observed in the other counties.



## Conclusions:

Based on the analysis of trends, it can be concluded that the imposition of the boar population factor in Białystok county could cause larger areas of wildlife habitat, and thus contribute to an increase in host ticks and increase in the number of ticks, what influence on number of TBE cases. Increase in boar population in Białystok may be caused by growth of corn and potatoes fields, lack of regulation of the population of wild animals. This is not observed in Hajnówka region, where National Białowieza Park exists with no access to human interference.