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THE INFLUENCE OF ABIOTIC FACTORS TO OCCURANCE OF BITING MIDGES (*CULICOIDES SPP.*) IN LATVIA

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Biting midges are small (1-4 mm) robust insects belonging to the Ceratopogonidae (Diptera) family which includes 1322 species belonging to the *Culicoides* genus. Obsoletus complex midges are distributed in the temperate zone and they are main vectors for bluetongue virus in Latvia (Conte *et al.* 2007).

Adult midges were caught using ultra violet light traps from 2007 to 2009 and in 2013 from March till November in different regions of Latvia. Adult midges were caught once per week during the darkness. Traps were placed in the penthouses of cowsheds and sheep sheds thus giving the possibility to observe the influence of climate conditions (the strength of wind, precipitation, night temperature) on the activity of adult midges.

Midges wing morphology used as character for *Culicoides* allocation in complexes. Analyzing samples from year 2007 to 2009 the total number of *Obsoletus* species complex, *Pulicaris* species complex, or other *Culicoides spp*. midges were determined per each sample. In 2013 *Obsoletus* and *Pulicaris* midges were also divided into three groups: just after feeding, lately fed and not fed.

During all study periods 609 samples in total were analyzed and mostly *Obsoletus* complex following *Pulicaris* complex and *Culicioides spp.* midges were observed (66%, 31% and 2%, respectively). Overall the abundance of *Obsoletus* and *Pulicaris* complex midges was significantly ($p<0.05$) correlated with mean temperature ($r=0.78$ and $r=0.79$, respectively). Also wind speed had significant negative correlation ($p<0.05$) with number of *Obsoletus* ($r= -0.60$) and *Pulicaris* ($r= -0.56$) complex midges. However further studies are needed to understand possible impact of abiotic factors to midge feeding activity.

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References:

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