Proteolytic and anti-proteolytic activity in the seminal plasma of Eurasian perch (*Perca fluviatilis* L.) during the spawning period

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The aim of this study was to describe possible changes in protease and anti-protease activity in the seminal plasma of European perch (*Perca fluviatilis* L.) during the spawning time. No significant difference in proteolytic activity was observed between the beginning and the late period of the spawning season in perch. Anti-protease activity significantly increased during the sampling time. Electrophoretic profiles of gelatinolytic activity in the seminal plasma of perch were characterized by four molecular forms, which depend on the presence of Ca^{2+} during incubation. We also found two forms of caseinolytic activity with low molecular weights, which were independent of calcium ions. However, both activities were fully stopped by the chelator of calcium ions (EDTA). In this study, non-typical profiles of gelatinolytic acti-vity were also observed. Profiles of protease activities in the perch seminal plasma are constant during the reproduction season indicating that the regulation of protease activity in seminal plasma occurs via protease inhibitors which are abundant in this fluid. Results concerning electrophoresis revealed at least seven forms of anti-proteases in the seminal plasma of perch. Concluded, anti-proteases comprise a high percentage of all proteins in the seminal plasma of perch, while the increase at the end of spawning season is probably protecting spermatozoa during the spawning time in perch testes.

Keywords:

European perch; seminal plasma; protease and anti-protease activity

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