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Czech J. Food Sci.

**Fidalgo L., Saraiva
J.A., Aubourg S.P.,**

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High pressure effects on the activities of cathepsins B and D of mackerel and horse mackerel muscle

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We determined high pressure processing (HPP) effects on the activities of cathepsins B and D in the muscles of mackerel (*Scorpaenopsis scorpaenoides*) and horse mackerel (*Trachurus trachurus*). In mackerel, the cathepsin B activity decrease reached 40% at 450 MPa while in horse mackerel, low and intermediate pressures (150 and 300 MPa) caused an activity increase (30%) but at 450 MPa a decrease of up to 60%. In both species, cathepsin D activity increased after a 300 MPa treatment (up to 2-fold for mackerel and 60% for horse mackerel) and decreased on a 450 MPa treatment. The activity increase is probably due to HPP damage of lysosome releasing enzymes into the fish muscle. Based on the HPP effects on the activities of

cathepsins B and D, 450 MPa may be used to reduce the proteolytic activity of cathepsin B prior to chilled or frozen storage of these fish species.

Keywords:

high pressure processing; fish; *Scomber scombrus*; *Trachurus trachurus*; mackerel and horse mackere; proteolytic enzymes

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