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ABSTRACT BOOK

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W58 ESSENTIAL AND TOXIC ELEMENTS DETERMINATION IN BRAZILIAN CULTIVATED MUSSEL PERNA PERNA

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Mariculture is an economic activity that is experiencing rapid growth worldwide due to the depletion of natural stocks. In the case of mussel culture, in several countries, like Brazil, Chile, Korea, Spain and Australia, the amount of cultivated organisms is becoming greater than that of those captured in nature. The *Perna perna* is the biggest Brazilian Mytilidae mussel, usually found in the Atlantic coast of South America from Venezuela to Uruguay and one of the most consumed by the Brazilian population. In the present paper, cultivated *Perna perna* mussels from a mussel farm at Cocanha Beach, in the city of Caraguatatuba, state of São Paulo were acquired and analyzed in the four seasons of the year, from 2005 to 2006, in order to assess the levels of some essential and toxic elements and to compare them with the limits prescribed by the Brazilian legislation. To determine the concentration of the studied elements, the following techniques were applied: instrumental neutron activation analysis (arsenic, bromine, chromium, selenium and zinc), epithermal neutron activation analysis (uranium), electrothermal atomic absorption spectrometry (cadmium and lead), and cold vapour atomic absorption spectrometry (mercury). For quality control, the NIST Standard Reference Material 1566b, Oyster Tissue, was analyzed. The results obtained have shown that the concentrations of arsenic, chromium and selenium were above the limits established by the legislation, whereas those of cadmium, lead, mercury and zinc were compliant. There is no specified legal limit for the uranium content in foodstuffs in Brazil. As for the seasonal variation, it was verified that the concentrations of cadmium, selenium and zinc were higher in winter, and those of mercury, in autumn and winter.. Arsenic and chromium were mostly accumulated in springtime and summer. For uranium the content was very similar in most seasons, except for springtime, when the accumulation was lower.