Thermal inactivation kinetics of peroxidase in bean (*Phaseolus vulgaris*) flour.

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The peroxidase is one of the enzymes possibly involved in the hardening of bean (*P. vulgaris*) during storage under high temperature and high relative humidity. The aim of this work was to study the thermal inactivation kinetics of peroxidase in bean (*P. vulgaris*) flour with moisture content adjusted to 17%. The flour was heated in the temperature range from 75 to 95 °C for periods of 1 to 32 min, and then proceeded to determine its residual activity, taking as initial value the enzymatic activity of a sample not heat treated. Heat inactivation of peroxidase followed first-order reaction kinetics. Each inactivation curve consisted of two linear parts: initial rapid inactivation (heat-labile) followed by slower inactivation (heat-stable). A statistically significant interaction (*p*≤0.05) between temperature and heating time was found. The value of *k* was in the range of 0.0335-1.3765 min⁻¹ and 0.0036-0.2094 min⁻¹ for the heat-labile and heat-stable fractions, respectively. Estimated activation energies were 50.4 kcal/mol for the heat-labile fraction and 52.4 kcal/mol for the heat-stable fraction.