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# **Czech J. Food Sci.**

**Lauková D., Valík L.,  
Görner F.**

# Effect of lactic acid on the growth dynamics of *Candida maltosa* YP1

Czech J. Food Sci., 21 (2003): 43-49

The growth dynamics of the oxidative imperfect yeast strain *Candida maltosa* YP1 isolated from the surface of fruit yoghurt was studied in relation to the lactic acid concentration ranging from 0 to 1.6% (w/v). The maximal specific growth rate of 0.36 h<sup>-1</sup> and minimal lag-phase duration of 2.9 h were found in the glucose solution without lactic acid at 25° C. The decrease of the natural logarithm of both the specific growth rate (ln  $\mu$ ) and the lag-phase prolongation (ln l) in the dependence on the increase of lactic acid concentration (0– 1.59%) was significantly linear (ln  $\mu$  = - 1.1458 - 0.6056 c;  $R^2_{(\mu)}$  = 0.9526; ln l = 1.0141 + 1.9766 c;  $R^2_{(l)}$  = 0.9577). Based on these equations, the prediction of the time necessary for *C. maltosa* YP1 to reach 1 × 10<sup>6</sup> CFU/ml in the dependence on

lactic acid concentration and, the initial density of the yeast culture was calculated. For example, *C. maltosa* YP1 was able to reach the level of  $1 \times 10^6$  CFU/ml in a model glucose solution at the initial concentration  $N_0 = 1$  CFU/ml, 0.9% lactic acid and 25° C within 2 d. The growth predictions presented indicate a considerable resistance of *C. maltosa* YP1 to lactic acid in the concentration of up to 1.3% (w/v).

### **Keywords:**

*Candida maltosa*; growth parameters; lactic acid

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