Title *In vitro* production of organic acids by *Penicillium expansum*.

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Abstract

Twenty isolates of *Penicillium expansum,* recovered from rotten pome fruits, were tested in vitro for ability to produce acid. To measure acid production, isolates were grown on creatine sucrose agar for 7 days at 20°C, the halo round the colony revealing a change of pH. Three isolates out of 20 did not produce the halo, while the others showed wide halos, revealing abundant acid production. The same isolates were also grown in yeast sucrose liquid medium (YSM) at different pH levels (7.0, 5.0, 3.0) for 3 days at 20°C. In general, the greatest reduction of pH was observed in isolates grown at pH 7. Four isolates maintained the pH of the medium close to 7, but the others significantly decreased the pH, raging from 5.5 to 4.1. To determine the prevalent organic acids produced, isolates were grown on liquid YSM for 7 days at 20°C, and the medium was analyzed by HPLC. Results showed abundant production of galacturonic (GA), malic, and citric acids and some unknown organic acids in smaller amounts. A high concentration of GA was recorded in the isolates that most reduced the pH of the medium. These isolates produced GA within 48 h of inoculation, while the concentration of citric and malic acid initially increased, remained constant up to 72 h and then increased again. More work is needed to understand whether organic acid production and the aggressiveness of *P. expansum* isolates are correlated.