

ABSTRACT

DETECTION, QUANTIFICATION, AND VIABILITY OF THE WINE SPOILAGE BACTERIA, *LACTOBACILLUS* AND *PEDIOCOCCUS*, USING POLYCLONAL ANTIBODIES AND FLOW CYTOMETRY

Polyclonal antibodies have been developed to detect *Lactobacillus* and *Pediococcus* by flow cytometry. Both of these antibodies showed strong cross-reactivity toward other species of lactic acid bacteria. The use of an adsorption procedure greatly increased the specificity of the *Lactobacillus* antibody, while not improving the specificity of the *Pediococcus* antibody. *Lactobacillus hilgardii* and *Pediococcus damnosus* populations, inoculated into white juice, red wine, and white wine, were monitored using the *Lactobacillus* antibody. The populations' viability was determined using the fluorescent dyes, SYTO 9 and propidium iodide. The *L. hilgardii* population exhibited higher viability than did the *P. damnosus* in the white wine and white juice, while in the red wine the viability of both species declined quickly. Polyclonal antibodies and fluorescent cellular dyes, in conjunction with flow cytometry, could give winemakers the capability of monitoring these spoilage organisms in real-time in wine.

Tiffany Cragin
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