

## PATHOGEN DETECTION

### AN INTER-LABORATORY EVALUATION OF SELECTIVE MEDIA FOR THE DETECTION AND ENUMERATION OF YEASTS IN BLUE-VEINED CHEESE (B. C. Viljoen, A. Knox, L. R. Beuchat, T. Deak, M. Malfeito-Ferreira, T. K. Hansen, A. Hugo, M. Jakobsen, V. Loureiro, A. Lourens-Hattingh, and R. Vasdinnyi)

Mold ripened blue-veined cheeses are produced from pasteurized cow milk to which lactic acid bacterial starters and a selected *Penicillium* species as a secondary starter culture have been added. Yeasts are not traditionally added as part of the starter culture or as adjunct starter cultures, but are often reported to develop as natural contaminants to high numbers ( $>10^6$  cfu/g) in these cheeses. Since the survival of the yeast species and their interaction with other microorganisms are governed by unique environmental factors, it is imperative to select suitable media for surveying the yeast development during processing and maturation, and for strain isolation purposes. We conducted an inter-laboratory study to determine the performance of mycological media for enumerating yeasts in blue-veined cheese.

Five laboratories in five countries evaluated 11 different selective media, designed to suppress mold and bacterial growth and support yeasts growth, for the recovery of yeast populations from blue veined cheeses. In addition, qualitative results were also incorporated. The yeast enumeration values were subjected to statistical analysis using analysis of variance (ANOVA) and the Tukey-Kramer multiple comparison test. With the exception of one laboratory, laboratories were unsuccessful in recovering yeasts on all the media. Six of the media proved inadequate for the enumeration of yeasts in a mold invested environment and were therefore omitted from statistical analysis. No significant differences in quantitative data obtained on Rose-Bengal Chloramphenicol Agar (RBCA), Dichloran Rose-Bengal Chloramphenicol Agar (DRBC), Dichloran 18% Glycerol Agar (DG18), and Malt extract agar supplemented with NaCl and oxytetracycline (MES) were detected by four of the collaborating laboratories whereas one laboratory found RBCA to be superior for yeast enumeration. DG18 and Malt Extract Agar with Biphenyl (MEB), however, were ranked superior based on qualitative results compared to the other media, attributed to distinctive individual yeast colonies and mold inhibition. RBCA, DRBC, DG18, and MES on the other hand, all proved to be adequate in supporting yeast colony development for quantitative analysis in samples obtained from blue veined cheeses.