

Selectivity of Commercial Culture Media for the Endogenous Microflora of Traditional Sourdough Bread

João M. Rocha⁺ and F. Xavier Malcata^{*}

⁺^{*} Escola Superior de Biotecnologia, Universidade Católica Portuguesa
Rua Dr. António Bernardino de Almeida, 4200 Porto, Portugal

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For a long time now, culture media have been made available in dehydrated form and have expanded in response to increased interest by more and more researchers worldwide in medical and food settings, both on the laboratory and industrial levels. Meanwhile, culture media have been developed for isolation of specific genera of microorganisms, by selectively allowing a high growth-rate for these specific groups while, at same time, inhibiting growth of the remainder. Despite strict quality control ensured by the suppliers, such media do usually perform poorly with respect to isolation of microorganisms from products that already bear a complex native microflora; this is the case of sourdough breads, as well as maize and rye flours used in the manufacture thereof, *e.g.* “**broa**”, a traditional bread manufactured at the farm level in Northern Portugal.

Total viable counts in samples of sourdough, maize and rye flour were obtained after inoculation on 10 different solid selective media poured onto *Petri* dishes. The identification of 419 isolates was via appropriate BioMérieux API™ galleries, after several preliminary biochemical and morphological tests; such identification has shown that the total counts on each medium do not correspond exactly to the expected group of microorganisms for that culture medium. In the case of Reinforced Clostridial Medium (RCM), for instance, no microorganisms whatsoever from the *Clostridium* genus could be isolated, whereas in *Pseudomonas* Agar Base (PAB) no microorganism was at all isolated, in spite of growth of *Pseudomonas* genera in other culture media. In most cases, *e.g.* Mannitol Salt Agar (MSA) and *Mayeux*, *Sandine* and *Elliker* Agar (MSE), a large diversity of microorganisms groups could also grow.