COMPARISON OF CHROMOGENIC AGAR MEDIA FOR RECOVERY OF *LISTERIA MONOCYTOGENES* FROM READY-TO-EAT MEAT AND POULTRY PRODUCTS

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Abstract:

The objective of this study was to compare the sensitivity and specificity of esculin- and chromogen-containing agars for the recovery of Listeria monocytogenes *from artificially contaminated ready-to-eat meat and poultry products.* Listeria innocua, Listeria ivanovii *and* Listeria seeligeri *were inoculated (1-10 cfu/25 g) onto samples (*n = *180) in addition to* L. monocytogenes *at 1-10 (LM level 1), 100 (LM level 2) or 1,000 (LM level 3) cfu/25 g. Three esculin-containing agars (Oxford, modified Oxford and PALCAM) and two chromogenic agars (Rapid'L. mono [RLM] and CHROMagar* Listeria*) were evaluated for the recovery of* Listeria *spp. With LM level 1,* L. innocua *overgrew the other three* Listeria *spp., and* L. monocytogenes *was recovered from only 6.7 and 1.7% of samples on CHROMagar and RLM, respectively, and from no samples on the esculin-containing agars. At LM level 2 and 3, chromogenic agars recovered* L. monocytogenes *better than the three esculin-containing agars (*P < *0.05). The highest sensitivity and specificity values were obtained with RLM and CHROMagar. These results indicate that chromogenic media could replace or supplement the current preferred media of the United States Department of Agriculture and Food and Drug Administration Bacteriological Analytical Manual methods to detect and isolate* L. monocytogenes *more rapidly with higher sensitivity without tedious confirmation tests.* PRACTICAL APPLICATIONS

The chromogenic media discussed in this paper could be used in industrial and academic laboratories to detect and isolate *L. monocytogenes* with some advantages. The media could differentiate pathogenic *Listeria* from nonpathogenic species without tedious confirmation tests that can take up days. These advantages could provide quick information on any contaminated product in food plants and prevent delivery of the defective products, which may result in recall. The media also have advantages for laboratories with limited personnel to conduct tedious confirmation tests.

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