Enrichment media for isolation of Campylobacter jejuni from inoculated ground beef and chicken skin under normal atmosphere

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Abstract:

The efficiency of Hunt broth containing Oxyrase was compared with the gas replacement method for detection of Campylobacter jejuni in inoculated ground beef and chicken skin. Five strains of C. jejuni were inoculated individually into samples and cultured with various media under conditions generated by either flushing with a mixture of gases or supplementing with Oxyrase. Oxyrase media added with 7% lysed blood, 2.5% charcoal, or 6% ground cooked meat were compared with examinations from chicken skin samples. Campylobacter counts from enrichments were performed at 6, 12, 20, and 28 h of incubation. From inoculated ground beef, counts at 20 h increased by 4 to 7 log CFU/ml depending on strains and initial concentration of inocula. The efficiencies of Hunt medium using gassing and those with Oxyrase added were similar (P > 0.05). Broth containing 0.15 U/ml of Oxyrase without blood effectively supported the growth of all strains (P > 0.05). From inoculated chicken skin, 20-h incubation counts increased by 3.0 to 7.5 log CFU/ml for the gassing method and by 2.7 to 7.3 log CFU/ml for supplementation with 0.6 U/ml of Oxyrase and blood. The addition of 7% lysed sheep blood provided better Campylobacter growth than supplementing with 2.5% charcoal or 6% ground cooked meat. Enrichment media incorporating with Oxyrase is a simple, convenient, and time-saving method to replace flushing with mixed gas for isolation of Campylobacter jejuni.

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