

**THE INHIBITION EFFECT OF CARVACROL ON
AMMONIA AND BIOGENIC AMINE PRODUCTION
BY COMMON FOOD BORNE PATHOGENS**

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The impact of carvacrol at different doses (0.1, 0.5 and 1%) on ammonia and biogenic amine production by eight common food-borne pathogens (*Staphylococcus aureus* ATCC29213, *Escherichia coli* ATCC25922, *Klebsiella pneumoniae* ATCC700603, *Enterococcus faecalis* ATCC29212, *Pseudomonas aeruginosa* ATCC27853, *Listeria monocytogenes* ATCC7677, *Aeromonas hydrophila* NCIMB1135 and *Salmonella Paratyphi A* NCTC13) was investigated in tyrosine decarboxylase broth using rapid HPLC method. Significant differences were observed in ammonia and biogenic amine production among bacteria ($P<0.05$). Ammonia production was in the range of 22.86 mg/L for *Ent. faecalis* to 571.99 mg/L for *L. monocytogenes*. Tyramine, dopamine, agmatine spermine and putrescine were main amines produced by bacteria. Histamine production by bacteria was below 2.1 mg/L. Tyramine production by *P. aeruginosa* was the highest (967.11 mg/L), whilst *K. pneumoniae* was poor tyramine producer (6.42 mg/L). The effect of carvacrol on ammonia and biogenic amine production varied depending on carvacrol doses used and specific bacterial strains. Carvacrol at doses of 0.5 and 1% was significant effect on reducing ammonia accumulation by bacteria apart from *A. hydrophila*, *Ent. faecalis* and *K. pneumoniae*. Tyramine production by bacteria significantly suppressed by addition of carvacrol at doses of 0.5 and 1%, while there was no inhibition effect of carvacrol at doses of 0.1% on tyramine formation by *Ent. faecalis* and all *Enterobacteriaceae* strains. The results of this study show that the possibility use of the carvacrol on food system to control biogenic amine formation in foods.

Keywords: Carvacrol, ammonia and biogenic amine production, food borne pathogens

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