

Effect of chlortetracycline on the
growth of Salmonella typhi-murium
in poultry and sausage meat

p.p.m. - part per million

320

N:o 30

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Both sausage-meat and minced chicken meat were used as media for investigating the effect of 10 p.p.m. of aureomycin on the growth of strains of Salm. typhi-murium and coagulase-positive staphylococci, varying in their sensitivity to aureomycin, and also on the growth of spoilage organisms. Approximately 200,000 test organisms per gram were used for the inocula.

Control and inoculated sausage-meats were stored at 15°, 22°, and 30°C. and chicken meats at 4°, 15°, and 22°C. for 10 day periods or until overgrown with moulds and/or *Pseudomonas*. Counts were made at 1, 2, 3, 5, 7 and 10 days.

The results of preliminary experiments have indicated that the growth of strains of Salm. typhi-murium and staphylococci sensitive to aureomycin was inhibited by the antibiotic in a manner similar to that of spoilage organisms. The growth of resistant strains of Salm. typhi-murium and to a lesser extent of staphylococci was, in some instances, enhanced by the presence of aureomycin at 15° and 22° C.

It has been shown that a small proportion of recently isolated strains of Salm. typhi-murium from various sources are resistant to aureomycin. 9% of strains tested by Huey and Edwards (1958) were resistant to 10 µg. of aureomycin. Three out of 58 strains isolated in 1958 (Great Britain unpublished) were found to be resistant to 20 µg. of aureomycin, whereas 110 strains isolated in 1947, 1952 and 1957 were all sensitive.

It is possible that the use of aureomycin for the feeding of young animals and for the treatment of poultry carcasses in the U.S.A. may gradually increase the resistance of strains of Salm. typhi-murium to aureomycin. If resistant strains can grow in treated foods at the expense of the spoilage organisms suppressed by aureomycin, then the risk of Salm. typhi-murium food poisoning from such foods stored under improper conditions of temperature favourable for bacterial growth is likely to be enhanced.

Tables and graphs show the results of these early experiments.

Huey, C.R. & Edwards, P.R. Proc. Soc. Exper. Biol. & Med. (1958) 97, 550.