



THE COMPLETE EGG WASHING  
AND SANITISING SYSTEM

Information Sheet No. 3

**D·A·W**  
**ENTERPRISES LTD**

UNIT 6  
EMERALD WAY STONE BUSINESS PARK STONE  
STAFFORDSHIRE ST15 0SR ENGLAND  
TEL 01785 811465 FAX 01785 811511

## THE SURFACE STERILISATION OF EGGS

**A STUDY CARRIED OUT BY THE STAFFORDSHIRE POLYTECHNIC  
DEPARTMENT OF APPLIED SCIENCE BIOLOGY DIVISION  
FOR DAW ENTERPRISES LIMITED, STONE  
PUBLISHED 21 JUNE 1989**

### CONCLUSIONS

1. Class A eggs were shown to be contaminated with the bacteria on the shell. Counts greater than 500/sq.cm were obtained from the surface of 47% of the eggs tested. Bacteria were readily cultured from all eggs. Class A eggs commonly have faecal contamination on the shell.
2. Treatment of eggs with a chlorine-based sterilant (ROTOSAN) considerably reduced the bacteria load.
  - a) No bacteria were isolated from 57% of eggs
  - b) However, strict sterilisation was not achieved as bacteria survived, possibly on endospores within the shell.
3. A combined treatment with sterilant (ROTOSAN) and disinfectant (ROTOGARD) removed most bacteria.
  - a) Greater than 98% of bacteria were removed from all eggs. No bacteria were isolated from the surface of 86% of eggs and less than 10 bacteria /sq.cm from the remaining 14% of the eggs tested.
  - b) Bacteria surviving sterilisation as endospores were removed by the subsequent disinfection. No bacteria were isolated by enrichment from 97% of eggs.
4. No bacteria were disclosed from the contents of any eggs tested.
5. It seems that the cationic disinfectant (ROTOGARD) does confer a considerable degree of protection against the recontamination of surface sterilised eggs. It has been shown to have anti-bacterial activity that persisted for at least one month at domestic refrigerator temperatures.

### FINAL COMMENT

The use of the described dual procedure produces an egg with substantially reduced bacterial numbers on the shell. This thereby minimises the potential for cross-contamination and possible food poisoning when preparing food involving eggs. This applies to salmonella and other, surface-borne pathogenic bacteria carried on the egg surface.

The abuse and mismanagement of this two stage system is unlikely. The first stage sterilisation uses freely available chlorine. This could however be exhausted by misuse. This potential failure would be corrected by the second stage using a cationic quaternary ammonium compound with its own anti-bacterial activity. This makes overall failure of the process much less unlikely.