



KEY WORDS

- ✓ Eggs
- ✓ Salmonella
- ✓ Quality
- ✓ Storage temperatures
- ✓ Storage period

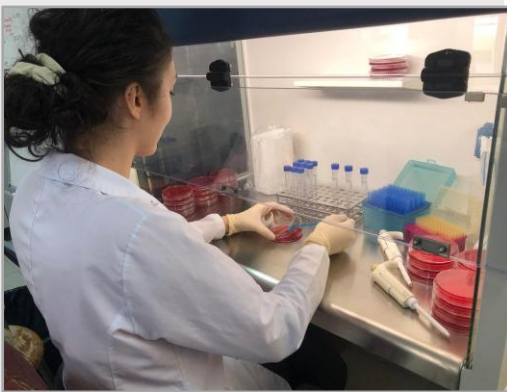
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EVALUATION OF SALMONELLA SURVIVAL AND QUALITY PARAMETERS IN EGGS HELD AT DISTINCT TEMPERATURES AND PERIODS

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GRADUATION DATE: 07.07.2026

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THESIS ABSTRACT

The study aimed to monitor the viability of *S. Enteritidis* (SE) and the quality changes in eggs stored at different temperatures and times. Artificial contamination was performed using the SE ATCC 13076 standard strain at a concentration of 1.5×10^6 cfu/mL. It was determined that in eggs kept at a constant 5°C (D) and 8°C (E), there was a significant decrease of approximately 4.5–5 logs in the shell SE count during the first 2 weeks of storage, whereas in eggs kept at a constant 25°C (B) and 30°C (C), an increase was observed or the levels remained the same. At 30°C, the pathogen penetrated from the shell to the interior starting from the 28th day of storage at the earliest and was detected up to the 42nd day. It was observed that SE maintained its viability in the 6th week, and penetration was prevented by cold storage. It was found that egg weight, air cell height, Haugh Unit (HU) value, albumen index, yolk index, albumen pH, and yolk pH values were significantly affected by the different storage temperatures applied. It was determined that storing eggs at 5°C and 8°C is appropriate to prevent weight loss and to maintain Grade A quality characteristics for 4 and 5 weeks in terms of air cell height, and for 6 weeks in terms of HU value, albumen index, and yolk index. In contrast, temperatures of 15°C and above caused a downgrade in the egg quality class as early as the 1st week of storage.

APPLICATION AREAS OF THE THESIS RESULTS

It will provide original scientific data regarding the storage conditions that the poultry industry can utilize to extend the shelf life of table eggs while maintaining their quality.

Furthermore, it will serve as an impartial reference for realistic conditions applicable in our country during the evaluation of studies conducted within the scope of the current legislation, the Turkish Food Codex Egg Communiqué.

ACADEMIC ACTIVITIES

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