

Pathogen reduction

Raw egg foods in high risk retail food premises

Purpose

Mishandling of eggs and egg-based products significantly contributes to foodborne illness. Common mishandling issues noted are:

- contamination of egg products by *Salmonella* from shell;
- failure to process (through acidification or heat) raw egg foods sufficiently to remove *Salmonella*;
- failure to clean and sanitise equipment and food contact surfaces;
- temperature abuse (i.e. storage above 5°C); and
- keeping beyond recommended storage life (maximum 24 hours) at refrigerated temperature.

This project was undertaken to assess compliance of high risk retail food premises with the use of raw egg foods to decrease *Salmonella* outbreaks.

Issue

Salmonella is a bacteria commonly associated with foodborne illness outbreaks. It has been known to be present on the surface of eggs and improper handling can lead to raw egg products becoming contaminated.

Raw egg products most commonly implicated in *Salmonella* food poisoning include:

- sauces and spreads made from raw egg, e.g. mayonnaise, aioli, egg butter; and
- desserts made without an effective cook step, e.g. tiramisu, mousse, fried ice cream.

The NSW Department of Primary Industries (DPI) have actively conducted projects to assess the risk of raw egg foods and educate food businesses in relation to the risks of raw egg foods. This includes publishing the [Food safety guidelines for the preparation of raw egg products \(the guidelines\)](#).

These projects and educational activities have led to a significant drop of *Salmonella* Typhimurium cases by over 50% in NSW since 2014.

What we did

Twenty-five (25) businesses were inspected during the operation and were selected based on previous council inspection data.

Targeted inspections were led by DPI Biosecurity & Food Safety (BFS) Compliance officers with the assistance of Local Council Environmental Health Officers (EHOs). The inspections assessed raw egg use in ready-to-eat foods and business compliance with the guidelines, including:

- cleaning and sanitation practices
- food handler skills and knowledge.

What we found

Products made with raw eggs

The most common products made with raw eggs included mayonnaise, egg butter, tiramisu and fried ice cream.

Premises continuing to process raw egg foods

Upon inspection, it was found that many businesses (17 from the total of 25) had ceased making raw egg products since their last council inspection.

Following the inspection, a further six businesses ceased processing raw egg products.

Two businesses chose to continue with raw egg products after the inspection.

Compliance with the guidelines

The guidelines outline requirements related to the pH of raw egg products. Findings from these inspections indicate there is limited knowledge of how to correctly measure the pH of final raw egg products.

Of the 8 businesses that were processing raw egg products, no businesses were correctly using a pH meter or pH test strips. Findings revealed that:

- one business was recording pH but on the day of inspection, product pH was recorded at 6.1 (considerably higher than the recommended <4.2),
- no business was able to demonstrate calibration of a pH meter,
- no business was able to provide buffer solutions for their pH meter,

- no business was able to demonstrate effective cleaning of the pH meter and particularly the bulb,
- one business had test strips onsite but were not using them for every batch.

Businesses were assessed as competent with raw materials handling and staff personal hygiene.

Three businesses were not effectively using sanitiser. Two businesses were found to not understand cross contamination and the role of a sanitiser. Each of the businesses with gaps in understanding of cleaning, sanitising and cross contamination were staffed by food handlers who spoke English as a second language.

Whilst the businesses had food safety supervisors in place, the level of understanding achieved from a Food Safety Supervisor course may be limited when delivered in English to those from a non-English speaking background, particularly when the Food Safety Supervisor is responsible for transfer of that information to other staff.

Mis-handling of raw egg products, particularly abuse of time periods and storage temperature was identified as an issue of concern in 5 businesses.

Familiarity with the guidelines appeared to be better in traditional Asian bakeries that have been targeted with inspection surveys previously. Businesses processing other raw egg products appeared to have experienced less regulatory visits focussed on raw egg use.

Outcomes

EHO's administered Prohibition Orders (for raw egg products) and Improvement Notices to businesses making raw egg

products based on their compliance inspection and previous enforcement history.

The project resulted in 6 businesses (75%) volunteering to remove raw egg products immediately on the arrival of the joint inspections.

The remaining 2 businesses continued to process ready-to-eat raw egg products strictly within the guidelines.

The project was limited by the number of available businesses producing raw egg products. This is testament to the intensive campaigns in recent years by DPI and Local Councils to reduce the incidence of salmonellosis from raw egg products.

The most significant finding of this project was a weakness in businesses in measuring pH as a controlling factor in reduction of *Salmonella* growth in product and understanding the importance of pH control.

Further, businesses that did not have a strong understanding of sanitising and the process of sanitising when compared to cleaning came from non-English speaking backgrounds.

Next steps

It is recommended that:

- EHO's encourage pH monitoring and control where businesses process raw egg products;
- fact sheets are prepared for food businesses processing raw egg products detailing pH meter calibration and cleaning including the required frequency of pH meter calibration;
- pH test strips be promoted as an alternative for of pH measurement, and instructions for use be provided.

It is further recommended that ready to use work instructions or industry factsheets in languages other than English to ensure key food safety information is provided to retailers.

More information

For further information visit:

<https://www.foodauthority.nsw.gov.au>

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