ANNUAL FOOD TESTING REPORT 2021-2022

NSW GOVERNMENT Food Authority

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Introduction

The NSW Food Authority's (the Food Authority) primary objective is to provide consumers in NSW with safe and correctly labelled food.

To support this objective the Food Authority regularly conducts testing of food products to ensure compliance with regulatory requirements, as part of foodborne illness investigations and to gather information to identify and respond to food safety issues. The Food Authority also undertakes scientific surveillance projects to identify and better understand food safety issues and risks in NSW. The data obtained in these surveillance projects allows the Food Authority to identify and respond to key food safety issues and develop systems and processes to manage the prevention of foodborne illness effectively and maintain food safety.

BVAQ, formerly DTS Food Assurance (DTS), is the primary testing provider for the Food Authority. Testing services provided by BVAQ include microbiological, chemical, foreign object identification, allergen contamination and nutritional composition. BVAQ has had accreditation from the National Association of Testing Authorities (NATA) since 1961.

At the end of each financial year, the Food Authority reports on the testing conducted by the Food Authority's primary testing provider and by other laboratories. Other laboratories used in 2021-2022 included Elizabeth Macarthur Agricultural Institute (EMAI) for microbiological analyses and NSW Health Pathology for serotyping and whole genome sequencing.

Why test?

Samples are submitted for testing for reasons such as hygiene assessment, foodborne illness investigation, verification of food safety programs and for research purposes. Testing results are then used to:

- Ensure compliance with regulatory requirements
- Assist with the development of food regulatory framework
- Assist with the evaluation and review of regulations
- Assist with enforcement actions
- Respond to incidents that occur in the industry
- Provide scientifically based industry communication, training and advice
- Provide scientifically based consumer advice and information
- Assist local government with concerns and complaints
- Assist with the development of emergency management framework

A year in review

Between July 2021 and June 2022, a total of 3,025 samples were submitted for testing: 2,630 samples were submitted to BVAQ where 3,577 individual tests were conducted and 395 samples were sent to other laboratories where 1,192 individual tests were conducted (Table 1). The number of samples was lower during this period as a result of restriction of movement due to the COVID-19 pandemic. Sample types analysed included meat, seafood, shellfish, dairy, plant products, packaged food, eggs and environmental samples (e.g. swabs). Many samples were submitted for multiple tests which may have included both chemical profiling and microbiological assessment. Over 50 different types of tests were performed including microbiological assessment, chemical assessment, pH, water activity and allergens.

Table 1. Number of samples per category

Category	Number of samples
Verification programs	159
Research and targeted surveillance projects	536
Food safety compliance	2,330
Total	**3,025**

Serotyping is a process that identifies a subspecies by its distinctive surface structures. *Salmonella* subspecies are distinguished by the chemical make-up of the 'O' antigen (outermost surfaces of the bacterial cell) and the protein content of the 'H' antigen (part of the bacterium's flagella). Each subspecies has a unique 'O' and 'H' combination. For example, the serotyping result for *Salmonella* Infantis is 6,7:r:1,5 and for *Salmonella* Typhimurium, the result is 1,4,5,[12]:i:1,2.

Whole genome sequencing (WGS) is a process where the unique genome of a microorganism, its DNA (deoxyribonucleic acid) sequence, is determined. The genome sequence of one microorganism can be compared with that of another to determine how closely related they are. This is of particular use when investigating foodborne illness outbreaks as it can link bacteria isolated from suspected foods with isolates from patients' specimens.

In NSW, all clinical and environmental *Listeria monocytogenes* isolates are analysed by WGS to determine their relatedness and search for clusters of illness and potential sources. Similarly, all isolates of *Salmonella* Typhimurium and *Salmonella* Enteritidis detected from NSW Food Authority sampling are sequenced for trends and comparison with clinical isolates for cluster identification. Other *Salmonella* serovars or foodborne pathogens are sequenced where there is a strong need (such as an increase in human cases in NSW and/or Australia).

From 1 July 2021 to 30 June 2022, 225 samples were submitted to NSW Health Pathology for identification by serotyping and WGS. These samples were *Salmonella* or *Listeria monocytogenes* bacterial isolates from food or environmental samples that had been submitted for testing due to a foodborne illness investigation, a verification program or a surveillance program. These 225 bacterial isolate samples are in addition to the sample numbers in Table 1 as they arise from testing of food or environmental samples accounted for in the sample numbers in Table 1.

Verification programs

Food Safety Schemes verification program for ready-to-eat (RTE) products

The Food Safety Schemes verification program monitors RTE food that is produced under NSW Food Safety Schemes (the Schemes). Samples collected as part of this program include dairy, meat, plant products and seafood. RTE foods that were manufactured or packaged under the Schemes were purchased directly from the manufacturer or from retail outlets and tested against the requirements set out in the Food Safety Schemes Manual.

Between July 2021 and June 2022, a total of 117 samples were randomly collected from retailers and submitted for testing (Table 2). This number of samples is lower than in previous years as sampling was suspended on several occasions due to COVID-19 movement restrictions during the year.

Three products from two different manufacturers were found to be non-compliant due to the following reasons:

- Three samples of soft cheese contained *E. coli* greater than the regulatory limit of 10 cfu/g.

Follow-up actions taken for these non-compliant results included re-sampling of product for analysis and referral to Compliance for further investigation

Table 2. Number of samples analysed for the Food Safety Schemes verification program

Scheme	No. of samples tested	No. of non-compliant samples (%)
Dairy	78	3 (3.8%)
Meat	32	0 (0%)
Plant products	5	0 (0%)
Seafood	2	0 (0%)
Total	**117**	**3 (2.6%)**

Raw poultry verification program

The raw poultry verification program gathers ongoing data on the prevalence and levels of *Campylobacter* and *Salmonella* in raw poultry so that changes over time can be monitored and the effect of Standard 4.2.2 can be analysed. The program was paused for review during most of FY 2022.

Samples of raw poultry were collected from processing facilities and retailers in NSW and tested for *Campylobacter* and *Salmonella*.

Between July 2021 and June 2022, a total of 6 whole chickens and chicken portions were collected from processing plants before the program was suspended due to COVID-19 movement restrictions and while the program underwent a review. The program will re-commence in January 2023.

UCFM verification program

Uncooked Comminuted Fermented Meat (UCFM) is a comminuted meat product manufactured by a series of processes including fermentation and maturation (with smoking and/or heat treatment as optional steps). In addition, the final product has not had its core temperature maintained at 65°C for at least 10 minutes or an equivalent combination of time and higher temperature during production.

In NSW, all UCFM products for sale must be produced in accordance to Standard 4.2.3 of the Food Standards Code (the Code) and the NSW Food Regulation (2015).

The Food Authority requires each UCFM to be manufactured in accordance with an approved pro forma, which is a documented and verified manufacturing process. Verification testing is required for one sample from each of the first two batches of a product manufactured under a new pro forma. The two samples must be submitted to the Food Authority for testing. From 1 July 2021 to 30 June 2022, a total of 34 UCFM samples were submitted for verification testing.

Research and targeted projects

The Food Authority conducts a number of research projects each year. The aim of these projects is to gather data to inform the Food Authority's future risk assessment work.

Vibrio parahaemolyticus in NSW oysters survey (2022-2024)

Vibrio are naturally occurring bacteria that are ubiquitous in the marine environment. Two *Vibrio* species have historically been associated with outbreaks of illness in consumers of raw shellfish. While *Vibrio* related foodborne illness outbreaks associated with NSW oysters are extremely rare, the potential for future outbreaks to occur warrants investigation given the potential health impacts from infection.

A survey commenced in April 2022 to determine the prevalence and level of total and pathogenic *Vibrio parahaemolyticus* in five major NSW oyster growing areas located in geographically diverse regions of the state. Test methods include determining total *V. parahaemolyticus* present in samples and PCR analysis for virulence markers. The data will inform the risk classification of key NSW shellfish productions areas and the potential for the risk profile to change if new shellfish species are cultured. Between 26 April 2022 and 27 June 2022, 70 samples were collected across the five estuaries. Results reported to date have been "not detected" or low level detections of *V. parahaemolyticus*, which will inform this baseline dataset.

There are no regulatory limits for *V. parahaemolyticus* in the Australia New Zealand Food Standards Code (The Code). Where specified limits or guidance levels have been set by other countries there is a very wide range; this likely due to the weak relationship between Vibrio levels and illness outbreaks. This survey will run until 2024, and a final survey report will be prepared following completion of the survey.

Allergen Labelling Project (2021-2022)

Undeclared allergens in foods pose a risk to allergic consumers. Recent Food Authority projects and reports from consumers and advocacy groups have identified a potential for confusion around allergen free and dietary preference labelling which may lead to increased risk of severe allergic reaction. This targeted project determined the level of

NSW food supplier and food manufacturer compliance with allergen labelling requirements when making allergen free and dietary preference claims on product labels. 399 allergen tests were conducted on 79 products sampled from a range of retailers (supermarkets, health food stores and online retailers). Product labels were assessed for compliance with allergen labelling requirements.

While 93% of samples collected complied with labelling requirements, this project identified precautionary allergen labels (PALs) that were potentially false and inconsistent with allergen claims made about the product. In some circumstances this may amount to a breach of labelling provisions, e.g. schedule 15 of the Food Act 2003 (NSW).

Following this project, guidance material will be developed to assist food businesses in making PAL statements and dietary preference claims that are unambiguous and based on a risk assessment.

The survey report is being finalised and will be available on the Food Authority's website.

Mandatory labelling for lupin as an allergen survey

On 25 May 2017 lupin was added to Standard 1.2.3 of the Food Standards Code (the Code) and food businesses were given 12 months from this date to meet mandatory allergen labelling requirements for any food products containing lupin. The use of lupin in its many forms, including kernels (made into kibble and flour), fibre, protein isolates and concentrate, is increasing in products manufactured and imported in NSW and the rest of the world. This survey, conducted in 2020-2021, assessed the level of compliance with the requirement for mandatory lupin allergen labelling.

The survey report is available on the Food Authority's website:
https://www.foodauthority.nsw.gov.au/sites/default/files/2022-06/Lupin-Survey.pdf

Salmonella Enteritidis (SE) mandatory testing

In August 2019, the Biosecurity (*Salmonella* Enteritidis) Control Order 2019 came into effect. The Control Order aimed to prevent, eliminate, minimise and manage the biosecurity risk posed or likely to be posed by the spread of *Salmonella* Enteritidis (SE) in NSW.

The Control Order was amended on 30 June 2020 to include a requirement for all licensed egg business in NSW to undertake mandatory SE testing from 1 July 2020. Sampling and testing is required every 12 to 15 weeks for the duration of the Control Order. This testing can occur within the National *Salmonella* Enteritidis Monitoring and Accreditation Program (NSEMAP), or at either EMAI or Birling Avian Laboratories. The Food Authority funded the cost of laboratory testing conducted by EMAI and Birling Avian Laboratories for the first two years of the program.

On 23 June 2022, the Biosecurity (SE) Control Order was amended and extended until 30 June 2024. NSW DPI will continue to fund the testing cost until then.

From 1 July 2021 to 30 June 2022, a total of 325 samples were tested at EMAI and Birling Avian Laboratories. SE mandatory testing activities will continue in 2022-2023.

Projects continuing into the 2022-2023 financial year

Projects continuing into 2022-2023 include:

- SE surveillance on egg farm testing (when required)

- SE mandatory testing on egg farm
- *Vibrio parahaemolyticus* in NSW oysters survey

Food safety compliance

Food safety compliance activities include:

- Conducting audits and inspections of food businesses
- Investigating breaches in compliance to the Code
- Investigating suspected foodborne illness
- Investigating labelling complaints and compliance
- Addressing issues identified by Food Safety Officers during audits
- Targeted food business or sector projects to increase compliance

These investigations can result in the analysis of food for a wide variety of tests. Enforcement action may be instigated for non-compliant samples. Between July 2021 and June 2022, a total of 2,330 samples were submitted to BVAQ and other laboratories (Table 3).

Table 3. Samples submitted for compliance investigations

Category	Number of samples
Samples taken during audits and inspections	24
Foodborne illness investigations	1,141
Complaints and Compliance projects	1,165
Total	**2,330**

Samples taken during audits and inspections

Samples taken during audits usually consist of raw meat samples that have failed a field test for sulphur dioxide (SO_2). SO_2 is not permitted to be used in raw meat. It is permitted to be used in sausages to a certain level. If a field test is positive, a three-part sample is then taken and submitted to BVAQ for SO_2 analysis. Some of these samples can also be submitted for meat speciation to determine whether the meat species matches with what is on the label. Sausage samples are occasionally submitted for SO_2 analysis to ensure they comply with the maximum permitted level in the Food Standards Code of 500 mg/kg.

Between July 2021 and June 2022, 862 audits of licensed retail meat businesses were conducted and 22 samples of raw meat (mince and sausages) from nine butchers were submitted for SO_2 testing as a result of a positive field test. Seventeen samples were non-compliant, with SO_2 values ranging from 180 to 740 mg/kg. Appropriate enforcement action was taken for the non-compliant samples.

Foodborne illness investigations

The Food Authority investigates suspected cases of foodborne illness in partnership with NSW Ministry of Health, local councils, and interstate agencies. Between July 2021 and June 2022, a total of 1,141 food and environmental samples were submitted for testing in response to foodborne illness investigations and their follow up activities. On at least six occasions sample results were used to confirm a clear link between a food source and foodborne illness.

Complaints and Compliance projects

Complaint samples usually result from either a member of the public contacting the Food Authority's helpline or from local council. Samples may be acquired from the complainant or from retail outlets, manufacturers or importers. Common complaints include unlabelled allergens, allergen contamination or poor labelling. Compliance projects usually result from an incident, increase in unknown illnesses, an increase in a particular issue seen during audits or inspections or an overseas or interstate event.

Between July 2021 and June 2022, a total of 1,165 samples were submitted for testing due to a complaint or compliance project.

Complaint samples

Between July 2021 and June 2022, 318 samples were submitted for testing due to a complaint. This number is higher than the previous year (146 samples were submitted in 2020-2021) because the investigation of two complaints resulted in the collection and analysis of a large number of samples.

Compliance projects

Two significant compliance projects conducted this year were in relation to egg farm clearance testing and egg farm individual biosecurity direction clearance testing.

Salmonella Enteritidis (SE) clearance testing on egg farms

As part of the response to the 2018-2019 SE outbreak associated with egg farms, the NSW DPI increased surveillance and monitoring at egg farms and issued biosecurity directions to individual properties where necessary, including quarantining of the premises to prevent the movement of eggs into the marketplace. Other actions taken included farm depopulation, decontamination and disinfection. Affected properties are not permitted to recommence egg production until required biosecurity and food safety standards are met.

Extensive clearance sampling and testing for SE was conducted on infected properties after decontamination and disinfection to allow them to recommence egg production. A total of 633 samples were tested. Clearance activities will continue in 2022-2023.

Salmonella Enteritidis (SE) individual biosecurity direction clearance testing on egg farms

Once an infected property has undergone clearance testing and SE is not detected, and required biosecurity and food safety standards are met, the property becomes a resolved property and egg production may re-commence. A resolved property that re-commences egg production is issued an individual biosecurity direction (IBD) under the

Biosecurity Act (2015). The IBD outlines the specific measures that must be followed while undertaking egg production activities.

Testing for SE occurs post re-commencement of egg production to confirm that the requirements of the IBD have been met and to allow progress towards the property's IBD being revoked. During 2021-2022, a total of 122 samples were tested. Individual biosecurity direction clearance testing activities will continue in 2022-2023.