Submission to the Productivity Commission Inquiry – Regulation of Australian Agriculture.

By NSW Egg Farmers' Association Inc.

The Regulatory Burden of Egg Stamping.

Summary

NSW Egg Farmers' Association Inc. (The Association) represent the interests of small and medium size egg farmers in NSW – the majority of egg producers in NSW.

The Association is pleased to have the opportunity to provide an input into the inquiry by the Productivity Commission on the impact of Regulation on Australian Agriculture. The Association submits that Egg Stamping, the main component of the Food Safety Australia New-Zealand (FSANZ) Standard (Standard 4.2.5) that was gazetted in 2011 and subsequently was adopted and incorporated into legislation by all jurisdictions across Australia (but not in NZ) is unnecessary, its introduction was based on faulty and inaccurate information and its cost outweighs the benefit to the community and to the Industry.

Egg stamping, the major cost component of the Standard (64%), has little to do with improvement to food safety or improvement in the ability to control outbreaks. The financial burden of this component of the FSANZ Standard when incorporated into the NSW Cost Benefit Analysis (2005) results in a cost that outweighs the benefits and therefore is contrary to COAG National Competition Principles Agreement requiring that the benefits of the proposed legislation be assessed to ensure they are greater than the implementation costs. A similar contradiction of COAG principles could be expected in other jurisdictions once egg stamping is included in a cost benefit analysis.

Furthermore, the combined financial burden of egg stamping on small farms is significantly disproportionate to their output, their production costs and to the potential food safety risk that they may impose.

The evidence following the introduction of egg stamping in Queensland (2005) and South Australia (2012) suggests that egg borne human Salmonella cases is on the rise. In NSW where mandatory egg stamping was introduced only in November 2014, no significant decrease in human cases has been reported.

While NSW Egg Farmers' Association agrees that food safety is a public health issue that should not be considered on economic grounds alone, the Association maintains that egg stamping has no significant direct or indirect public health benefits and it is a regulatory component that imposes an unnecessary, disproportionate burden on egg producers.

Standard 4.2.5 – Primary Production and Processing Standard for Eggs and Egg Products (Proposal P301)

The key elements included in the Standard are:

- Bird Management.
- Collection and initial sorting.
- Cleaning / washing and drying of intact shell eggs.
- Packing, storage and transport of cracked eggs and raw pulp.
- Pulping (Commercial off-farm).
- Pasteurisation.
- Storage and distribution of treated (pasteurised products).
- Use of eggs and egg products by manufacturing businesses caterers and other types of food businesses.
- Retail sale of shell eggs and egg products.
- Traceability (egg stamping).
- Skills and knowledge of food handlers.

FSANZ stated (page 23, FSANZ Regulation Impact Statement) that *"with the implementation of the Standard the reduced disease burden is expected to be in the range of 35% -70%".*

This has not materialised.

The total cost of the measures in the Standard is $7,460,838 (FSANZ Regulation Impact Statement, RIS). Among all the measures, egg stamping constitutes, according to figures in the FSANZ Regulation Impact Statement (RIS), the main financial burden - $**4,775,900** (initial and running costs) for the egg industry in Australia. Other Costs of Standard 4.2.5 total $2,684,938 and therefore, based on FSANZ RIS, **64%** of the total cost of the Standard.is egg stamping.

The arguments against mandatory egg stamping

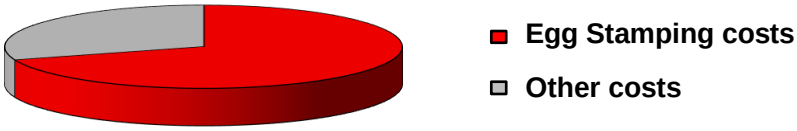
1. The cost of egg stamping is disproportionally high
2. Industry costs far outweigh the claimed benefits
3. There are no net benefits when egg stamping is included in the cost/benefit analysis (NSW as an example)
4. Significant and unjustifiable impact on small egg farms
5. Egg stamping is irrelevant to foodborne illness
6. Egg stamping provides no significant traceability benefits
7. The introduction of egg stamping was based on erroneous information
8. Egg associated food borne outbreaks are on the rise despite egg stamping

1. The cost of egg stamping is disproportionally high

The figures to arrive at the FSANZ egg stamping cost - $**4,775,900**, as explained in Appendix 1 (page 14), were underestimated by a factor of 1.4. The realistic cost should have been **$6,215,900** [$3,920,000 initial cost (2.8 M (large & medium farms) x 1.4 + $106,900

small farms) plus $1,120,000 on-going costs (L+M farms) and $1,069,000 on-going costs for small farms.

The other costs associated with the Standard according to FSANZ RIS total $2,684,938 and therefore once an adjustment factor of 1.4 is applied, **70%** of the cost of the Standard is egg stamping (64% without adjustment of 1.4).

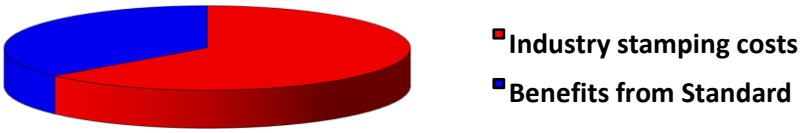


This ratio could perhaps be justified if indeed egg stamping was capable of delivering a significantly superior food safety outcome, or if it provided a superior traceability capacity compared with other traceability options. This is not the case.

The Victorian Agricultural and Food Security Minister, Mr Walsh, stated that *"the requirement is going to have an adverse effect on the profitability of food producers without achieving any meaningful gains"* (The Financial Review 8/6/2011)

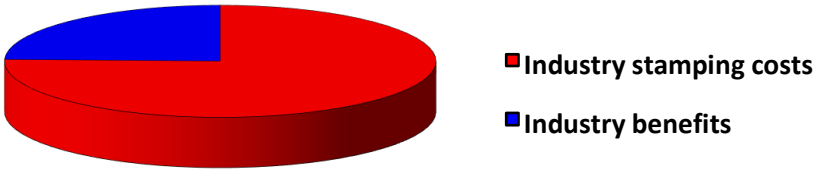
2. Industry costs far outweigh the claimed Industry Benefits

Based on FSANZ original RIS figures (Egg Stamping Cost - $4,775,900 and Industry Benefits - $2,775,000 Table 5 Section 7.1.1 page 17 FSANZ RIS), the ratio of stamping costs outweighs industry benefits



Furthermore, the FSANZ claimed industry benefits figures were erroneous and the benefits were overestimated as per Appendix 2 (page 16).

A more accurate pie chart of the ratio of egg stamping costs and benefits is presented below. This is based on corrected FSANZ RIS data as per Appendix 2, page 16.



FSANZ concluded in its RIS that "*Regulation of the egg industry has the greatest potential to deliver maximum net benefits to the Australian community, even at a conservative level of 20% efficacy"*. However, if this can be achieved (and 10 years of mandatory egg safety scheme in Qld demonstrate otherwise), it could be achieved without egg stamping – the most costly and least effective component of the current regulations.

3. There are no net benefits when the costs of egg stamping is included in the cost/benefit analysis (NSW as an example)

The COAG National Competition Principles Agreement requires that the benefits of the proposed legislation be assessed to ensure they are greater than the implementation costs; and an assessment of the restrictions on competition imposed by the proposed legislation to ensure that it is no more limiting than is necessary to achieve the required outcome (The NSW Food Authority Regulation Impact Statement, 2005).

NSW is the major egg producing jurisdiction in Australia and thus can provide an insight into the cost benefit ratio once the cost of egg stamping is considered in the context of a RIS. The cost benefit analysis that was done in NSW in 2005 provides such an opportunity and the analysis highlights a significant issue – once egg stamping is added to the cost, there are no financial benefits as required by COAG principles.

Page 44 of the NSW Food Authority Regulation Impact Statement (2005) provides a summary of cost and benefits. According to this table the total benefits amounted to $2,873,268 and the total cost was $ 1,198,500.

The conclusion drawn in the 2005 NSW FA RIS was that the proposal for a regulation requiring food safety programs for the NSW egg industry clearly will have net benefits, will be in the public interest, and should be approved. The ratio of total benefits to total costs will be about 2.4 to 1.

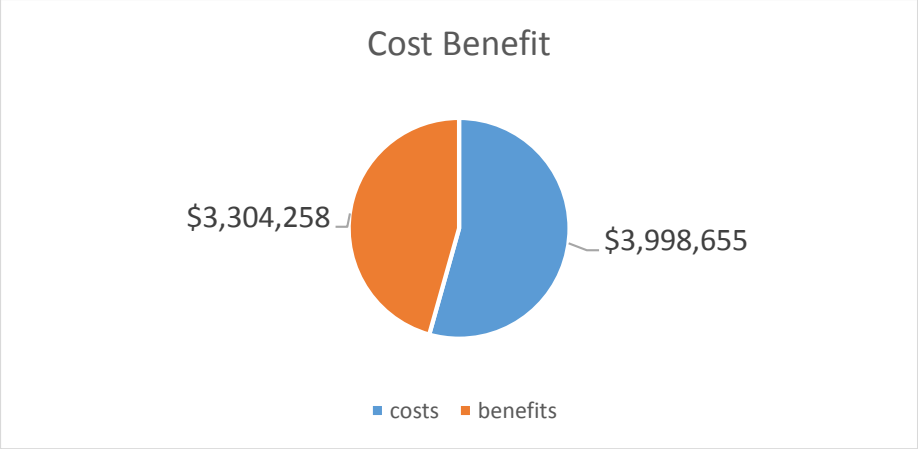
However, egg stamping was not on the agenda at the time and the RIS did not estimate its impact.

The cost of egg stamping in NSW, based on NSW proportional contribution to the national egg output of 33% but effectively 45% (when Qld is excluded from the cost as per FSANZ RIS), is **$2,797,155**,($6,215,900 x 45%).

When this cost is added to the summary costs of $1,198,500, reported in the 2005 RIS, the costs are **$3,995,655**.

Even when the Australian Taxation Office CPI inflation rate of 15% is applied to the NSW benefits ($2,873,268) (and no indexation of costs) the total benefits are **$3,304,258** and the ratio of total benefits to costs is **0.83**. This negative ratio is significantly different from the positive ratio of 2.4 demonstrated in the NSW RIS in 2005 before the introduction of egg stamping.

Once egg stamping is included in the NSW RIS (2005) there are no net benefits.



4. Significant and unjustifiable impact on Small egg farms

A comparison between on-going costs on small farms and medium and large farms (based on the original FSANZ RIS figures) indicates that 57% of egg stamping costs are carried by small farms.

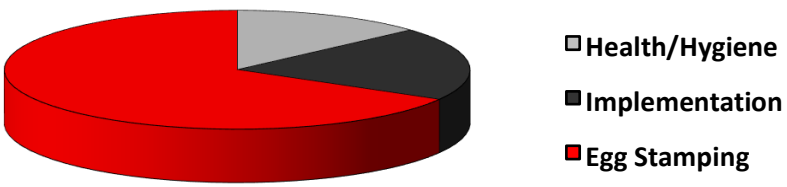
Thus, this sector carries more than 50% of the cost while contributing only 4.3% to the national egg production in Australia (4.3% is in page 21 FSANZ RIS).

<u>On-going costs</u> (unadjusted, original FSANZ figures)

Large/medium Farms	Small Scale Farms	Total
$800,000	$1,069,000*	$1,869,000

57% of the on-going costs are carried by small farms.

Egg stamping accounts for 66% of the costs of the Standard on small farms.



On-going costs as % of the cost of production on small farms

NSW Egg Farmers' Association Inc. maintains that the costs estimated in the FSANZ RIS for small farms are only applicable to very small farms. Nevertheless, based on the adjusted annual egg production volume of 219,109,500 dozen eggs per annum that required stamping in 2009 (excluding Queensland) and the small farm sector contributing 4.3%, (FSANZ RIS, page 21); the total egg production for the small farm sector was 9,421,708 dozen eggs per annum.

With 1069 small egg farms (excluding Qld), the average annual egg production per small farm was 8,813.57 dozen eggs.

Based on FSANZ's $1000 cost of eggs stamping per small farm, the cost per dozen eggs is estimated to be **11.34 cents**.

The cost of production of a dozen eggs according to DAFF Price Determinants In the Australian Food Industries were estimated to be $1.25 per dozen 700 gram cage eggs, $1.70 for dozen 700 gram barn eggs and $2.15 for dozen 700 gram free range eggs or an average of $1.70 per dozen eggs. Therefore, stamping eggs would impose, based on 2009 figures, approximately **7%** additional production costs on every dozen of 700 gram eggs produced by small farms.

Duck and Quail farms that produce eggs for sale (and generally are small farms) are also required to stamp each egg. The FSANZ RIS has only analysed the cost benefits of the Standard for chicken eggs although their production and cost structure are different from duck and quail egg farms.

In NSW (Egg Stamping For Egg Producers) an exemption has been introduced for operators that produce less than 20 dozen (240) eggs a week and sell their eggs direct from the farm gate, or use those eggs for a fundraising purpose where the eggs will be cooked and consumed immediately. Practically, based on 70% hen day production this means that the exemption applies only to extremely small flocks of 50 or fewer hens.

In reality, small egg farms are not 50 hen flocks. NSW Food authority (The NSW FA Baseline evaluation of the NSW Egg Food Safety Scheme, 2013) refers to farms that produce up to 250,000 eggs daily as small farms, AECL in its submission to the productivity commission in 2010 described small farms as a family run farm with 15,000 hens and the Microbiological Baseline Survey of the Queensland Egg Production Environment (2014, Table 2 page 19) refers to small farms as farms with 15,000 or fewer hens.

Small egg farms and food safety

It was alleged in the FSANZ RIS that small farms lack food safety programs and supply unidentified substandard eggs to the market.

The following points are made

- The argument that small farms lack quality assurance programs and supply unidentified eggs to the market is now redundant since mandatory food safety schemes have been introduced across Australia. They cover small farms and enable regulators to monitor quality and adherence to requirements for identification of eggs without resorting to egg stamping.

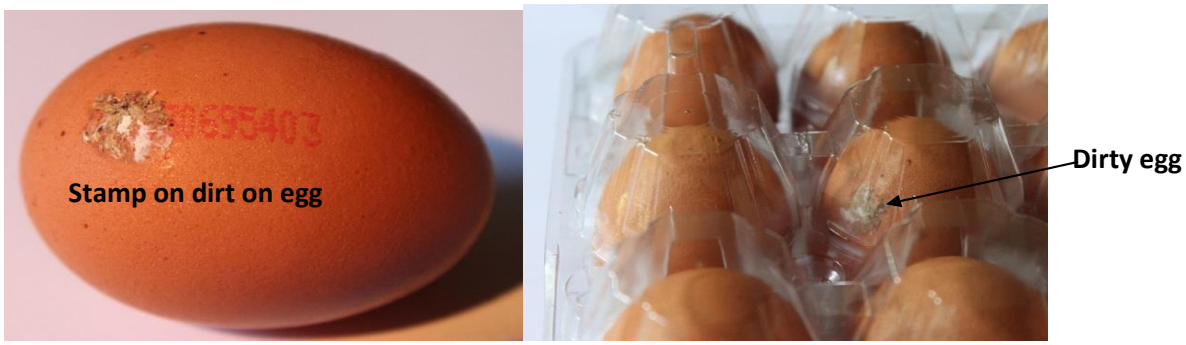
- The NSW FA Baseline Evaluation of the NSW Egg Food Safety Scheme (2013) found that over 84% of participants scored A with an overall food safety performance of 92% for the NSW Egg Industry. 91% of the participants were small producers (Table 1 page 10 in the above reference). This data does not present an alarming food safety issue among small egg producers to justify targeting this sector far beyond market share and risk.
- Small producers generally tend to supply locally through direct sales either on the farm or to individual outlets thus, enabling good traceability without egg stamping.
- Reasons given for the necessity to stamp each egg; egg swapping or storage of eggs outside their carton are generally poorly justifiable and practically very little advantage could be gained from individual egg stamping compared with carton labelling. For the small farm sector specifically they are irrelevant since the identity of the supplier is likely to be known to the buyers and this in conjunction with carton labelling provides an optimal traceability tool.
- The cost of egg stamping on small farms is significantly disproportionate to their output, their production costs and to the potential food safety risk that they may impose.

5. Egg Stamping is irrelevant to foodborne illness

FSANZ declared objective was "*to reduce the likelihood of food-borne illness due to the consumption of contaminated eggs and egg products while avoiding any unnecessary burden".*

The FSANZ RIS stated that *"a clear identification of the source of each egg is needed to ensure that unsafe eggs are prevented from entering the market",* but the automated inkjet stamp is unable to identify unsafe eggs as illustrated below. Thus, stamping each egg is incapable of delivering this outcome and is unable to contribute significantly to the stated main objective of the Standard; to reduce the likelihood of food-borne illness occurring due to the consumption of contaminated eggs and egg products.

The photographs below illustrate this point.



In the photos above the eggs were purchased on the 19/3/14 from Coles Supermarket at Narellan, NSW. (Photography by Dr E Arzey)

It was stated (Safe Food Queensland) that egg stamping would enable the public to identify 'good eggs' but clearly the above photographs show that this is not the case. Furthermore, it is doubtful that when buying eggs the public would examine the individual egg stamp rather than the carton in order to assess the credentials of the eggs.

The South Australian Government Communication (2013) stated -*"Egg stamping does not guarantee food safety – it is how your business handles the eggs after purchase that is important."*

The NSW FA Periodic Review of the Risk Assessment (2013) reported an implied Salmonella prevalence of 0.45% for ungraded but visually clean and intact eggs and 0.3% for graded eggs. This implied prevalence (0.3%) translates to approximately 1.26 million dozen graded eggs with some level of Salmonella contamination reaching the market (based on AECL 2014/15 egg production in the Annual Report).

Salmonella organisms are part of the normal ecology on many poultry farms as reported by the microbiological surveys of egg farms in NSW (2013) and the microbiological baseline survey in Queensland (2014). Therefore, being an integral part of the hen environment, Salmonella are able to contaminate the egg at various production stages and egg stamping is incapable of exerting any influence on this aspect.

FSANZ stated (Explanatory Statement Proposal P301, 2012) that Australia has an unacceptable number of cases of foodborne illness caused by contaminated eggs and egg products and the objective of the regulatory approach was to reduce the incidence of foodborne illness from Salmonella by minimising the prevalence and concentration of this pathogen in eggs and egg products.

Most of the elements of Standard 4.2.5 have the potential to mitigate some aspects of the risk however, egg stamping is unlikely to facilitate this objective.

The conclusion is that the highest regulatory financial burden is being imposed by the least public health effective regulatory requirement - egg stamping.

6. Egg Stamping provides no significant traceability benefits and its introduction was based on erroneous information

In view of the significant financial burden that this component of the regulation imposes and its insignificant ability to mitigate the risk, any reasonable justification for egg stamping should be based on a superior ability to trace or, the lack of other effective traceability tools.

This is not the case.

FSANZ claims about a lack of a traceability system

The FSANZ RIS did not attempt to compare the cost-benefit of other traceability mechanisms with the cost-benefit of egg stamping but rather erroneously claimed the absence of a national traceability system for eggs in Australia, although in 2001 a labelling system that enables good traceability had already been endorsed by ARMCANZ (Agriculture and Resource Management Council of Australia and New-Zealand). The endorsed traceability system included core information such as egg producer's name, address, lot identification and Best before date.

The information on the carton enables identification of the farm of origin without egg stamping.

The farm code (EE1) is stamped on the Best Before Date sticker (above) and on the carton below (F3)

The NSW FA (2005) stated that "*The Australian New Zealand Food Standards Code Standard 1.2.2 presently requires traceability of food back to the manufacturer or supplier by printing name of food, lot identification, and name and address of the supplier on the carton. The requirement for lot identification can be satisfied by Standard 1.2.5 Date Marking of Packaged Food".*

Rather than enforcing the 2001 ARMCANZ-endorsed labelling requirements, a new requirement – egg stamping was introduced even though The NSW Food Authority Regulation Impact Statement (2005) stated that "accurately labelled egg cartons facilitate rapid identification of producers involved in possible outbreaks" and "as such, the new regulation will not have additional requirements for eggs. *However, there is a need for some education and enforcement of traceability where recycled cartons are used".*

In an article published in Microbiology Australia (2013) Moffatt and Musto from OzFoodNet and NSW Health wrote that "i*n reality egg stamping is unlikely to be useful as eggs and their packaging will likely have been used or discarded before an investigation commences".*

This is particularly the case in the food sectors where most egg-borne outbreaks have been reported – restaurants, cafes, food take-ways and catering outlets.

In single households, where foodborne outbreaks are not often investigated (The NSW Food Authority, Periodic Review of the Risk Assessment, 2013), it is as likely that the eggs shells will be discarded long before investigations commence.

Significant elements that are likely to affect the availability of egg shells if investigations commence in single households include;

- the average Australian household - 2.6 persons (Australian Institute of Family Studies 2011)
- egg consumption pattern - 5 eggs /person /week (AECL Annual Report 2010).
- the predominantly sold egg pack sizes in Australia are 6, 10 and 12 packs.
- the time for disease symptoms to develop, be recognised, medical attention to be sought and for the causative organism to be identified.
- the time for the causative food to be recognised.
- time lag for investigations to be carried out (more than 10 days as evident from the timeline of investigations by OzFoodNet, Unicomb et al CDI Volume 27 issue 4 Dec 2003, Roberts-Witteveen CDI Vol 33 Number 1 2009, Sarma et al CDI Vol 26 Number 1 2002, OzFoodNet 1st Quarter Summary WA).

Claims about zero traceability before the introduction of egg stamping and misrepresentation of the true number of outbreaks after the introduction of egg stamping in Qld.

The information regarding traceability before and after the introduction of egg stamping supplied by Qld and used by FSANZ in its RIS document (page 23) was misleading as it claimed that eggs involved in food outbreaks in Queensland could not be traced back to the farm prior to the introduction of the egg stamping scheme in Qld in 2005 (Appendix 3, page 18) and also the information misrepresented the true number of egg-linked foodborne outbreaks after the introduction of egg stamping in Queensland (Appendix 4, page 21).

The claimed cost saving, practicality and usefulness of individual egg stamping as a recall tool is questionable.

A claim was made in the FSANZ RIS that egg stamping enables targeted recalls as opposed to industry-wide recalls and that egg stamping improves outbreak control. Furthermore, when calculating the industry benefits a recall of eggs was assumed in each food-borne egg related outbreak (100% recalls).

The Association suggests that carton labelling enables as much if not better targeted recalls than egg stamping but regardless, recalls of eggs in Australia are uncommon and the calculation of the industry benefits in the FSANZ RIS based on a recall of eggs in 100% of outbreaks is unrealistically high.

An examination of Product Safety Recalls (Australian Competition and Consumer Commission) between 1999 and 2015 has highlighted several aspects:

- Between 1999 and 2016, although hundreds of egg associated foodborne outbreaks were reported during this period, only 6 resulted in recalls.
- All 6 egg recalls occurred/were initiated in Qld
- Although egg stamping has been in place in Queensland since 2005, egg stamps were not provided as an identifying feature in the recalls.
- All the information the recalls provided was a description of the egg carton and the identifying features listed are the carton weight and Best Before Date (see below including ‘product description’ and ‘identifying features´).

Product description

William's Eggs is conducting a recall of the above products.

Identifying features

Best Before: Up to and including 16 June 2015

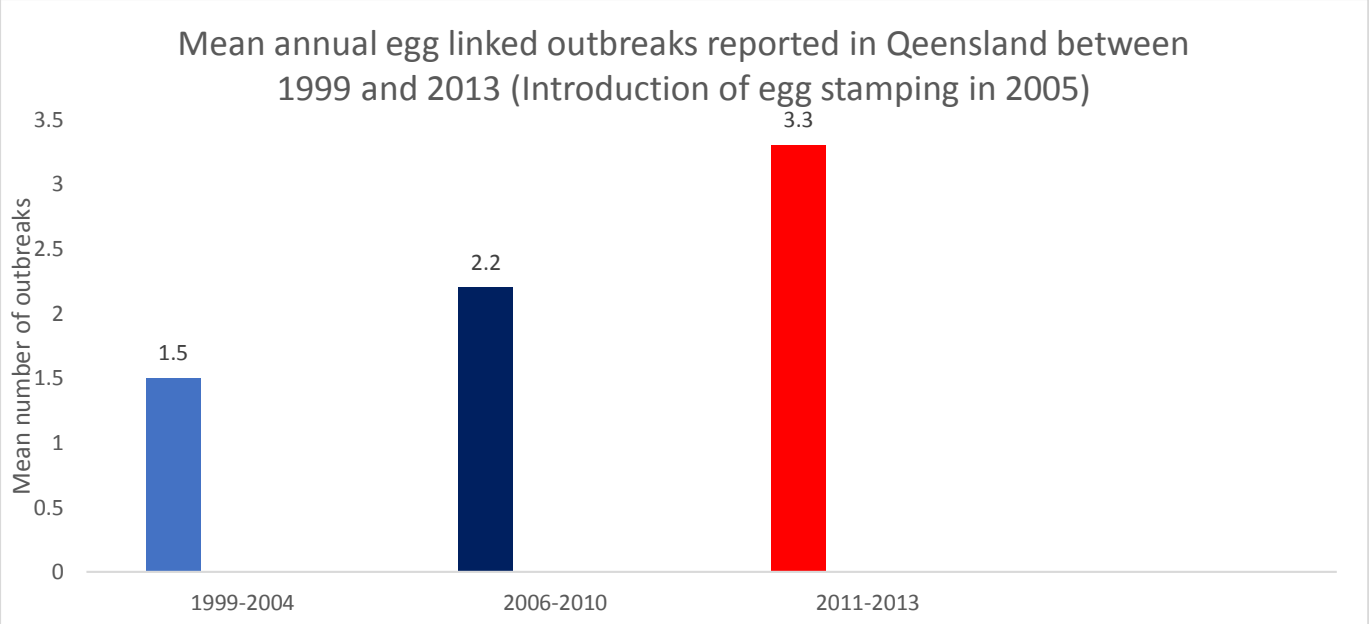
(https://www.recalls.gov.au/content/index.phtml/itemId/1071437)

The above example for recall of William's Eggs demonstrates that the information on the carton such as Best-Before-Date is used as a traceability /recall tool and it is a tool deemed sufficient without egg stamping.

7. Egg associated food-borne outbreaks on the rise

Food-borne outbreak data in Australia shows that the expected reduction of 35% - 70% in egg-associated disease burden (page 23, FSANZ Regulation Impact Statement) or even the conservative estimate of 20% as a result of the introduction of the FSANZ Standard and its main component - egg stamping has not materialised.

The graph below provides the annual mean egg-linked foodborne outbreaks in Queensland before the introduction of egg stamping in 2005 and outbreaks in subsequent years until 2013 (Based on Tables in Appendix 3 and 4 and OzFoodNet Annual and Quarterly Reports for 2011, 2012 and 2013).



The trend in Queensland continues to demonstrate an increase in egg-linked Salmonella cases despite the operation of the egg-stamping scheme for more than 10 years in this jurisdiction.

In March 2015, The Australian Institute of Food Safety (Food Safety Notes, 2015) described the situation in Queensland "Not so Egg-cellent; Queensland 2015 Salmonella Crisis".

A microbiological survey of the Salmonella egg environment (Microbiological Baseline Survey of the Queensland Egg Production Environment 2014) after almost 10 years of operation of the Queensland Egg safety scheme still found a wide presence of Salmonella on Queensland's egg farms and the results to be comparable with NSW in 2011. Contrary to claims made in the FSANZ RIS, egg stamping, evidently is incapable of mitigating this reality - the high prevalence of Salmonella on egg farms and the fact that the egg passes through the same orifice as the faeces.

In South Australia, although the Egg Safety Scheme has been operating since December 2012, according to the South Australian Director of Public Health Services, Salmonella cases reached a five year high in November 2015 with egg related cases forming a significant element of the problem (The Advertiser November 2015).

In NSW where the egg scheme has been operational since 2010 Salmonella notifications among NSW residents demonstrated increased numbers of human cases.

Salmonellosis notifications in NSW residents, by month of disease onset. January 2012 to December 2015

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2012	324	325	358	242	193	125	151	199	189	271	259	303	2939
2013	413	371	343	349	291	199	187	174	174	321	276	331	3429
2014	507	493	502	411	409	240	211	204	240	287	350	443	4297
2015	601	523	459	361	284	238	206	175	201	276	322	387	4033

Although not all the above notifications were attributed to eggs, nevertheless, since during 2001- 2009 investigators reported that nearly 75% of the outbreaks were egg associated (Moffatt and Musto, Microbiology Australia April 2013) and this figure is consistent with the figure stated by a microbiologist and infectious disease expert with the Australian National University - Doctor Collignon (Australian Food Safety News, 2015), it is reasonable to attribute a significant proportion of the rise in Salmonella cases in the table above to eggs.

Conclusion

The Association agrees that food safety is an important public health issue and eggs contribute significantly to foodborne incidents in Australia.

However, egg stamping, the major cost of the Standard, does not contribute directly or indirectly to food safety and its impact on public health, nor is it practically effective or an economically efficient option of traceability.

It can be concluded that the highest regulatory financial burden is being imposed by the least effective regulatory measure - egg stamping.

The Association maintains that egg stamping and the financial burden of egg stamping on small farms is significantly disproportionate to their output, their production costs and to the potential food safety risk that they may impose.

The Association maintains that egg stamping is of little merit and a regulatory component that imposes an unnecessary burden on egg producers, especially on small egg farms.

Appendix 1

The cost in the FSANZ Regulation Impact Statement was based on annual egg production data of 150,000,000 dozen eggs requiring stamping. No explanation was ever provided why this figure was chosen or on which year annual egg production data it was based. The national egg output in 2009 (when the FSANZ RIS was published) was **345,000,000** dozen eggs (AECL Annual Report 2010).

Queensland's egg component was excluded in the FSANZ RIS from the national production data (since egg stamping was already operational in Queensland) and based on its reported share of 27% (AECL Annual Report 2010) the national cost should have been based on 251,850,000 dozen eggs or **219,109,500 dozen** eggs if only eggs for retail and catering (87%) were required to be stamped.

(While the rationale in the FSANZ RIS for excluding Qld from the initial costs could be accepted since the egg stamping scheme was already operational in Qld, the exclusion of Qld from on-going costs is questionable since these are recurring costs that continue to mount as long as egg stamping is in place).

This represents an underestimation of the volume of eggs requiring stamping in 2009 by a factor of 1.46.

However, since the cost of egg stamping on small farms was not volume based and small farms according to the FSANZ RIS contributed 4.3% to the national total egg production, the factor of 1.46 is adjusted to 1.4 (1.46 x 0.96) for the purpose of calculating the cost of egg stamping on medium and large farms

The volume of eggs produced by medium and large farms in 2009 that require stamping should have been **210,345,120** (219,109,500 x 0.96) and not 150,000,000 dozen eggs. Therefore, the implementation and running costs of the egg stamping component for large and medium farms when adjusted to the 2009 egg output by medium and large farms are as below

Implementation

On the basis of 2009 egg production in Australia (excluding Qld and excluding eggs not requiring stamping), using the 1.4 underestimation factor, the total initial cost of egg stamping is calculated to be **$4,026,900** and not $2,906,900 [$2.8 million (L+M farms) x 1.4 = $3,920,000 +$106,900 (small farms)].

Running costs

Medium and large farms

"About $800,000 per annum as ongoing costs of stamping for medium and large scale producers" was estimated in the FSANZ RIS (RIS page 20 ongoing traceability and identification costs) This was based on a figure of 150,000,000 dozen eggs and if this figure is adjusted to reflect the cost associated with **210,345,120** dozen eggs (see above), the cost has to be adjusted by a factor of 1.4. Hence, the cost should be **$1,120,000**.

Small farms (no adjustment)

The total running costs of the Standard including health, hygiene, food safety requirements ($200/farm), costs of implementation of compliance ($300/farm)

and egg stamping ($1000/farm) was estimated by FSANZ RIS to be $1,573,500 (page 21). The on-going costs associated with egg stamping was estimated by the FSANZ RIS to be **$ 1,069,000** or **68%** of the total costs of the Standard (Based on what Victoria identified as traceability costs of $1,000 per small farm and the national number of small farms (excluding Qld) to be 1069 (FSANZ RIS Small Farms ongoing costs, page 21).

The combined stamping costs (implementation and on-going) for small, medium and large producers is therefore - $6,215,900

Appendix 2

Page 9 of the FSANZ RIS stated the following;

*"Given that NSW accounts for 33% of the national value of egg production, the cost of reputation, damage and wastage to industry Australia-wide in 2005 would have been about $ 4.09 m. Applying the Australian Taxation Office (ATO) CPI inflation rate of 15% for the period 2005-10, this would amount to $4.7 m per annum for Australia. However given that Queensland which accounts for **13%** of the country's egg industry, already has a food safety scheme for eggs which meets the requirements of the proposed standard, the annual cost in terms of reputation, is estimated at about $4.09 m (87% of $4.7 m) nationally. In addition, there are costs associated with product recall, which average $13.75m per annum in 2006 for food products in general. According to OzFoodNet, in 2007 eggs were suspected as the cause in 16% of identified outbreaks. If we make the assumption that eggs are responsible for 16% of total estimated number of foodborne salmonellosis cases annually, this would amount to $2.44m at current prices (16% of $13.75m ($2.2m) for 2006 adjusted by the ATO's CPI index of 11.14 % for 2006-10). It is therefore estimated that under the status quo, the egg and egg products industry in Australia could be incurring costs as a consequence of reputation damage, inefficiencies and product recall, amounting to $6.53 m ($4.09 m + $2.44 m) annually".*

The benefits of the Standard to Industry in the FSANZ RIS were based on: a) 50% reduction in damage, reputation, litigation, fines, shutdown and b) 50% reduction in recalls of eggs.

Several erroneous assumptions and figures were used

- FSANZ RIS national figures were based on $4.7M and discounted by **13%** to accommodate the need to exclude Qld and therefore the total was $4.09M. However, in 2007 Qld contributed **27% and not 13%** to the national egg production. Therefore, the figure of $4.7M requires adjustment to reflect the correct data of egg production by Qld as per AECL report for 2007). The adjusted outcome is a figure of $3.43M.
- The benefit from reduction in egg recalls were estimated in the FSANZ document on the basis of food-linked outbreaks in Australia with an average costs of $13.75M per annum in 2006 for general food product recalls. Eggs in 2007 were responsible for **16%** of the total food borne outbreaks in Australia. With 11% indexation the benefits of a 50% reduction in outbreaks and recalls was estimated in the FSANZ RIS to be $2.44M. However, the figure of $ 2.44M was derived by assuming that a recall occurs <u>in every outbreak (100%)</u>. This is an incredibly unrealistic assumption when the reality of outbreaks in Australia is considered. It is clear from the history of outbreaks data that recalls rarely occur. (Of the 24 outbreaks reported in 2007, including an outbreak in NSW reported to affect 319 persons (OzFoodNet Annual report 2007), only <u>one voluntary</u> recall of eggs was reported (the farm in Qld was involved in several outbreaks). (see Product Safety Recalls Australia (Australian Competition & consumer Commission)

When the FSANZ RIS benefit $ figures are scrutinised the benefits are lower. And the Table below illustrates it

	Cost ($M)	Total ($M)	Total cost with 50% outbreak reduction ($M)
FSANZ RIS figures			
Damage & reputation Qld excluded on the basis of contributing 13% to the national production (FSANZ RIS figure page 9)	4.09	6.53 (page 9 RIS)	3.26 Note – RIS figure (p22 and Table 7) was 2.75
Recalls $ based on eggs recalled in 100% of outbreaks	2.44		
Scrutinised figures			
Damage & reputation Qld excluded on the basis of contributing 27% to the national production data (actual industry data)	**3.43**	4.04 (indexed)	**2.02**
Recalls $ based on eggs recalled in 25% of outbreaks *	0.55 * or Indexed **0.61**		

Therefore, on the basis of the above, although recalls are still most unlikely, the percentage of egg-linked outbreaks resulting in a recall was corrected from 16% to 4% (1 of 4 outbreaks resulting in recalls). On this basis the cost of egg recalls is estimated to be $0.55 million ($13.75 million x 4% = $0.55 million; indexed to $0.61 million).

Therefore, the more realistic figure for the industry benefit is **$2,020,000** (see Table above).

(Total benefits of $2.75M as per page 22 and Table 7, page 25 in the FSANZ RIS was used in tables and graphs in this report as the FSANZ original figure for industry benefits).

It should be noted that the FSANZ RIS did not exclude the Qld component of the national egg-linked outbreaks from the national percentage of egg-linked outbreaks (16% in 2007) although in 2007, 29% of the Australian total of 24 outbreaks was reported in Qld. This would have brought down the 16% used to calculate the egg - share of cost of recalls to 11% (71% x 16%).

When a realistic figure is placed on the benefits from a reduction in the number of recalls of eggs and accurate Qld production data is used, the benefits are **$2,020,000** and the ratio between egg stamping costs and benefits of the Standard to industry is **3.08.**

Appendix 3

Traceability before and after introduction of egg stamping in Queensland

A statement appears in Table 6 of the RIS that in none of the incidents before the introduction of the egg stamping in 2005 in Qld was the source traceable. This statement is inaccurate. Furthermore, the number of egg linked outbreaks after egg stamping was introduced in Qld is also inaccurate.

FSANZ RIS Table 6 (page 23) - Queensland food-borne illness linked or likely linked to egg farm practices (original FSANZ data that is inaccurate as per dot points below)

Year	Number of incidents	Number of people affected	Source of eggs	National egg-associated outbreaks of gastrointestinal illness
1996-2003	12	Almost 800 cases, including at least 56 hospitalisations and 2 deaths	**Not traceable**	n/a
2006	0	-	-	16 outbreaks; 191 cases
2007	1	73 cases	Seven separate outbreaks traced to one egg farm within 48 hrs	24 outbreaks; 629 cases
2008	0	-	-	23 outbreaks; 531 cases
2009	0	-	-	n/a
2010	1	34 cases	Traced to one egg farm within 24 hrs	n/a

A similar version of this table appears in the Queensland document titled – Qld Food Production (Safety) Amendment , Regulation (No. 2) 2004, Regulatory Impact Statement for SL 2004 No. 320. In this document one incident involved handling of baby chicken hatching at a child care facility (listed as a food item but handling of baby chickens could hardly be classified as consumption of eggs or farm practices). Hence the number of incidents should be 11.

Data was found on 6 of the 11 egg-linked cases in the FSANZ table (Table 6). This data demonstrates that the eggs were traceable to the farm.

The remaining 5 cases may have been untraceable, the food ingredient responsible was not identifiable or the agencies at the time, for a variety of reasons, did not attempt to trace them.

The traceable 6 incidents are listed below. An additional case in in a bakery in Qld in 2004 that was not reported in the FSANZ RIS Table 6 was reported elsewhere (FSANZ Risk Assessment, 2009) and this incident was traced to the farm. When the 2004 incident is added to the number of egg-linked incidents in Qld before the introduction of egg stamping, seven of the 12 cases (60%) were traced to the farm of origin.

These are listed below:

- 1996 Salmonella Heidelberg Qld – Was traced to a producer although the producer was not named in the Media (source – OzFoodNet, 2006), prepared for the Australian Government - Department of Health and Ageing by Applied Economics Pty Ltd March 2006, ISBN: 0 642 82906 3 Online ISBN: 0 642 829071, Publications Approval Number: 3827)

- An outbreak of Salmonella Heidelberg in 2001 due to egg-nog in an aged care facility - **"**The vehicles of infection were not identified, however, the suspected source of infection for the *S*. Heidelberg outbreak was locally produced eggs which were used in raw egg flips served at the facility. (OzFoodNet Annual Report 2001. p 16)

  Also in the Egg Salmonella quantitative Risk Assessment Model (Thomas et al 2006) at least one of the S Heidelberg outbreaks in Qld in 1999 and 2001 is listed in table 2.1 page 9 – "Source investigated".

- The 2002 Salmonella Typhimurium 135a suspected egg sandwiches in a child care facility – B J McCall et al (CDI Vol 27, No 2, 2003)- " Eggs obtained from the CCC tested negative for *Salmonella* spp. However, subsequent drag swabs of the egg farm were positive for *S*. Typhimurium phage type 135a from two of three sheds"

  Also in Qld report - An outbreak of *S*. Typhimurium PT135a occurred in a child care centre, December 2002 in Brisbane. 12 children affected. Trace back investigation identified *S.* Typhimurium PT135a in a poultry farm shed that indirectly supplied unclean eggs to the centre.(Salmonella Typhimurium PT135 in Queensland Pathogen Fact Sheet).

- In Qld report - An outbreak in a Qld aged care facility in December 2003 affecting 47 people (16 hospitalised, 2 deaths) was suspected to have been caused through the consumption of eggnog containing raw egg. No microbiological confirmation. Egg and drag swab samples taken from the poultry farm tested negative. (Salmonella Typhimurium PT135 in Queensland Pathogen Fact Sheet).

  Also in OzfoodNet Quarterly Report Oct Dec 2003 - Salmonella 135 Age care facility - **"**although food histories were difficult to obtain and *S.* Typhimurium 135 was not isolated from the egg-laying environment. The provision of raw egg drinks to residents of aged care facilities is inappropriate and has previously resulted in outbreaks" (This means that the farm was traced),

- 2003, Salmonella Typhimurium phage type 135, restaurant, 18 hospitalised, suspected raw egg dressing, (Hollandaise sauce) – In FSANZ Risk Assessment,(2009) Appendix 6A, it is indicated that the eggs were traced back to the source.

- 1996 assorted sandwiches, Salmonella Typhimurium RDNCAO41 –Table 2.1 in Thomas et al (2006) Case ID 36 -Salmonella Source was investigated.

The above demonstrate that the data on traceability in Table 6 in the FSANZ cost benefit document is inaccurate and misrepresents the facts.

Appendix 4

Egg implicated incidents in Qld after introduction of the egg safety program

The number as extracted from Table 6 in the FSANZ RIS (see Appendix 3, page 18) are presented in the Table below

Year	Number of incidents
2006	0
2007	**1**
2008	0
2009	0
2010	**1**

This table indeed could demonstrate a decline in egg linked outbreaks in Queensland after 2005 provided its data was accurate. This is not the case as explained below;

There is a difference in the number of incidents reported between 2006 and 2010 in Table 6 in the FSANZ RIS and the number in the table below that is based on CDI and OzFoodNet reports.

Egg implicated incidents in Qld after the introduction of the egg safety scheme (CDI and OzFoodNet Reports)

Year	Number of incidents	Reference (s)
2006	**1****	CDI Vol 33 No 4 2009
2007	**7*** (5 traced to one farm)	OzfoodNet annual report 2007
2008	0	
2009	1 (eggs suspected?)	OZFoodNet Qld 2009
2010	**3**	OzFoodNet Annual Report 2010, Table 14

Key:

**** Retrospective** multiple locus variable number tandem repeats analysis profile.

* 3 different serovars of Salmonella Typhimurium 197, 135a and U302

It would appear that the number of incidents after the introduction of the egg safety scheme, reported in the FSANZ RIS was significantly lower than what can be found from other sources.

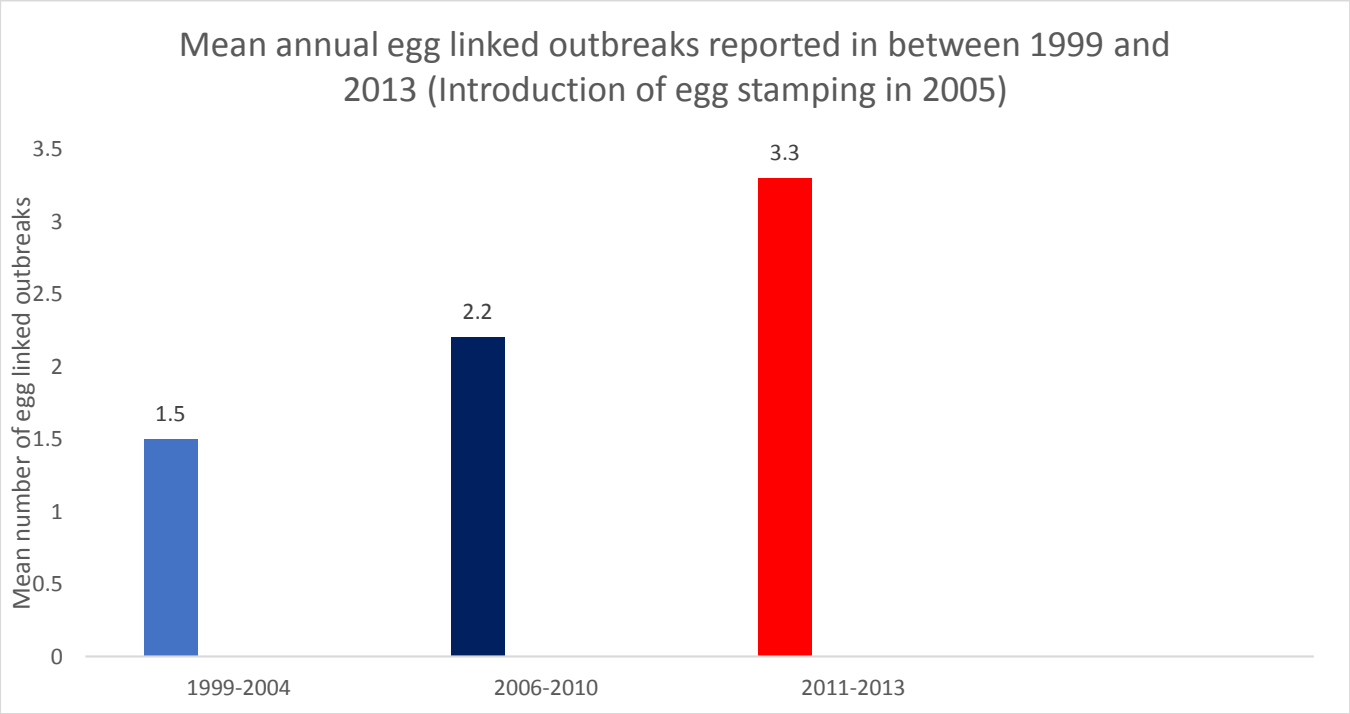
Eggs were suspected (<u>but not confirmed</u>) as a cause of Salmonella STm PT 44 in residents of a Gold Coast nursing home between 30/1/2009 and 27/2/2009 (OzFoodNet Annual Report Qld, 2009). If added to the Table above there would be 12 incidents however, since eggs were only suspected this incident was not added to the tally.

It is unclear why only 1 incident was mentioned for 2010 but 3 can be found from other sources (perhaps the 2 additional incidents were not available at the time that the report was written but in this case the Table should have made it clearer that the data covers only part of 2010).

Comparing the number of incidents (12 including 2004) in the period between 1996 -2004 (before the introduction of the Qld Scheme) and the number of incidents (11) in the 5 year period between 2006 and 2010 (after introduction of egg stamping) does not demonstrate a reduction in the number of outbreaks where eggs were implicated. On the contrary, the annual mean for the period 1996-2004 (1.5) is lower than the annual mean (2.2) after the Egg Stamping Scheme was introduced.

The data also demonstrates that one farm was involved in 5 outbreaks over 5 months despite egg stamping being in place. Egg stamping did not prevent unsafe eggs reaching the market or repeat outbreaks from one source over a period of 5 months.

The number of egg linked food borne incidents in Qld between 2011 and 2013 (10), (based on OzFoodNet annual and quarterly reports for 2011-2013 also does not demonstrate a reduction in the mean annual egg linked food-borne outbreaks (3.3).



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