



REVIEW OF THE NEW ZEALAND POULTRY BROILER POPULATION ESTIMATION

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Main Purpose: Decide Discuss Note

Purpose of Report

1. The purpose of this paper is to summarise the work reported on the New Zealand poultry broiler population.
2. Attached to this paper is the original report (with reviewer comments) “*Emission estimations for the commercial chicken, non-chicken and layer industries within New Zealand*”, a brief document detailing further reviewers comments and a revised report of the same title.

Summary

3. New Zealand currently estimates emissions from the poultry industry using a Tier 1 methodology (Statistic New Zealand’s Agricultural Production Survey) and default values from the Intergovernmental Panel on Climate Change (IPCC) 1996 Guidelines and the IPCC Good Practice Guidelines (2000).
4. Although there are draft IPCC 2006 guidelines which contain different methodologies and default values, the United Nations Framework Convention on Climate Change (UNFCCC) conference of parties (COP) has not accepted the use of them until 2015. The 2006 guidelines can be voluntary used from 2013, with mandatory usage from 2015. However, until such time countries are unable to use the methodologies in these guidelines. The use of the emission factors can only be used if countries are able to scientifically prove that the default values are more appropriate to their country, and then these are taken on as country specific emission factors.
5. The New Zealand poultry industry is concerned that emissions from poultry within New Zealand may be over estimated due to the defaults used in the calculations and also an over estimation of the poultry broiler (meat) bird population.

6. A report was therefore written by the poultry industry on an alternative method for estimating poultry broiler population, and country specific information for the calculation of emissions.
7. The report was peer reviewed by AgResearch. The review was positive but did highlight the need for independent review of models discussed in the report and values including gross energy intake, more independently tested nitrogen excretion rates, and more species specific data for ducks and turkeys.
8. Therefore, until such time as this information is available, the only recommendations being proposed are an alteration to the calculation of the bird population (section 2 original report and section 3 revised report). It is proposed that this report will also be reviewed by a second reviewer who specialises in poultry before these recommendations are presented to the panel.

Annual average populations of poultry grown in New Zealand

9. The report summarises the current methodology that Statistics New Zealand uses in the Agricultural Production Survey to estimate annual bird populations for broiler birds, layer hens and ducks and turkeys. This methodology was originally developed and agreed to by the Poultry Association, MAF & Statistics NZ. At the time this methodology was considered to be the most robust methodology. However, the report notes that the current methodology may not actually take into account the fact that the majority of birds are not alive for the entire rotation period for broilers, ducks and turkeys.
10. Using industry collected data, the report estimates that the average age of broiler birds are 37 days, 95 days for turkeys and 43 days for ducks at slaughter. Where as using the rotations currently used in the methodology developed by Statistics NZ, MAF and the Poultry Association (i.e. 365 days divided by number of rotations), the average age of broiler birds is 60, 102 days for turkeys and 57 days for ducks.
11. Statistics NZ have indicated that the methodology can be altered, subject to suitable information being supplied to justify the change.
12. As layer hens are alive for longer than 12 months the same issue with population estimation does not occur.
13. Industry average ages for broiler birds, turkeys and ducks were gathered directly from industry producers. Data for broiler birds was based on extensive industry and market share data. Data for turkeys and ducks was supplied to the poultry association by managers of the only turkey and duck producers in New Zealand.

14. Due to the differences in average age estimated by the two methods it appears that the population of broiler birds, turkeys and ducks may be being over estimated. The report has suggested a revised methodology for estimating average annual population for these categories.

Consideration of nitrous oxide emission factors for poultry

15. Currently New Zealand uses country specific emission factors for EF_3 , $Frac_{LEACH}$ and $Frac_{GASM}$. These emission factors have been based on extensive research but the majority of the research has been limited to conditions involving dairy and sheep. However, these emission factors are also currently applied to calculations involving minor species, including poultry. We wish to get your expert opinion as to whether this is appropriate or whether the emission factors should remain at the IPCC default factors until sufficient evidence exists for their modification.

Proposed changes to inventory

16. *After the Agricultural Advisory Panel meeting on 17 August 2010 further discussions with the Poultry industry Association New Zealand (PIANZ) and Statistics New Zealand were held. The proposal of adjusting the emission factor for age and using actual slaughter number of birds rather than trying to determine an annual average population was put forward. This was agreeable to both parties. Due to the lateness of this suggestion and the delay in a second peer review of the poultry report, it is suggested that any decision concerning the poultry population number used for the calculation of emissions be deferred until the 2011 panel meeting.*

Proposed changes to initial report and justification

17. *Suggest that the actual authors name is printed on the report.*

Response to reviewer comments

18. Reviewer comments are generally positive. The requirement for further information on values used in the estimation of methane and nitrous oxide emissions have been taken on board and the recommendation concerning these have therefore not been presented to the panel.

Strategic Risks

19. The change in methodology to estimate average annual population may not be accepted by the UNFCCC reviewers. However, if this is the case there is an extensive process which is followed in which New Zealand can state its case or change back to the IPCC default before any penalty would be applied.

Strategic Opportunities

20. New Zealand will be meeting the UNFCCC obligations of continual improvement of the National Inventory.

21. Emissions from New Zealand poultry will be calculated more accurately.

Recommendations

It is recommended that the Agricultural Inventory Panel:

22. *Agree to defer the discussion and decision around poultry population numbers until the 2011 Agricultural Advisory panel meeting.*

Agree / not agreed

23. *Agree that a second independent review, preferably by an animal population model expert, be carried out before the 2011 Agricultural Advisory panel meeting*

Agree / not agreed

24. **Agree** that poultry nitrous oxide emission factors remain at New Zealand specific emission factors currently used.

Agree / not agreed

OR

25. **Agree** that poultry nitrous oxide emission factors use IPCC default factors where currently used.

Agree / not agreed

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Approved/ Not Approved/ Approved as Amended

Alice Marfell-Jones
Manager Monitoring and Evaluation
Chair Agricultural Inventory Panel

Date