

**Title:** Evaluation of performance of tunnel ventilated layer housing

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### *Summary*

In order to reduce the cost of egg production during difficult economic periods, Australian producers are seeking more efficient housing systems. Current housing performance in Australia is unable to provide the economic optimum temperatures required by layers during both winter and summer.

Information from other countries suggests that tunnel ventilated houses are more efficient and economic for egg production, and more conducive to the bird's welfare than traditional, naturally-ventilated houses.

This study monitored the tunnel ventilated layer house of an innovative commercial egg producer in comparison to traditional design layer houses on the same property in New South Wales. Because both systems were under the same management, it was possible to provide a fairly accurate comparison however it is important to note that the project is a field observation and not a designed experiment achieving statistically valid results.

The project aims to:

- Monitor the environmental, hen and economic performance achieved by tunnel ventilated housing and compare these with those achieved by naturally ventilated layer housing
- Provide information which will allow egg producers to make a more informed decision when choosing shed type for housing layers

Methodology procedures included placing single aged flocks of the same strain into two sheds: a full insulated tunnel ventilated house with temperature control and a naturally ventilated house with no control ventilation rate.

After one year, the average hen housed egg production was 20.8 eggs better in the tunnel ventilated house than in the naturally ventilated house. Variation in temperature was also reduced, which ran approximately 2°C warmer during the second year of the study in order to produce the smaller eggs demanded by the market. Finally, farm gate costs indicate that the tunnel ventilated housing gave a net return of 8.52 cents per dozen more than the naturally ventilated house.

The study recorded a number of other factors which effect egg production, including temperature variation during extreme seasons, water consumption for the hens and carbon dioxide levels.

This project has demonstrated that by using well designed tunnel ventilated housing incorporating adequate insulation, a good ventilation system and air leakage prevention, it is possible to maintain temperature within the limits desired for efficient production. These results could not be achieved without the high standard of management applied on the participating farm.

Potential benefits to the industry are improvements in production efficiency, through increased eggs per hens housed, reduction in feed consumption per hen and an improvement in feed conversion. Based on farm gate costs there is a possible saving of 8.52 cents per dozen eggs or \$2,770 per 1000 hens housed. If this is applied by the entire Australian egg industry there is an estimated annual saving of \$28,115,500.

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