



POULTRY RESEARCH COUNCIL

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Dear Egg Industry People,

This is the second of our letters about the Council's major research programmes and activities.

THE PROGRAMME FOR NEXT FINANCIAL YEAR

There are fifty applications for funding of new and continuing projects and travel grants in 1988/89. These will be considered at the Council's first meeting for this year at Surfers' Paradise on the 20th and 21st of April.

Proposals for joint funding by this Council and the Chicken Meat Research Council will be decided on during a meeting of both Councils in Sydney on April the 22nd.

CHOICE FEEDING - IT WORKS!

BIRDS can and do choose what they need to balance their own diet. This was clearly established in work done on choice feeding of layers by Associate Professor Rob Cumming at the University of New England.

Professor Cumming found that birds will adjust their intake of nutrients in response to changes in temperature and egg mass production. He found that a successful technique was to place whole grain (wheat or sorghum) plus a balanced protein concentrate (excluding limestone), and limestone chips, into a single feed trough in front of caged layers.

It is important that pullets are placed on a choice-feed diet before they begin production but the concentrate portion of the diet must still be formulated by a competent nutritionist.

The diet, fed free-choice, is usually cheaper per tonne than a fully compounded mash or pelleted diet as the energy and labour cost of preparing the diet is reduced.

The cost per dozen eggs produced is further reduced as each bird only eats what it wants and requires.

The idea of choice-feeding is new in its application to layers in cages.

It may be necessary to provide additional silos or to adapt feeding equipment so that the ingredients can be distributed to the birds in the right proportions.

Several field trials are now in progress within NSW to demonstrate the technique.

A project conducted by the NSW Department of Agriculture at the Seven Hill Poultry Research station has shown that choice-fed layers can return around \$1 more each, than mash fed controls over the same period of time.

More details on choice feeding can be gained from Mr. Ian Littleton at Seven Hills (PH: 02 622 6322).

GRANT APPLICATIONS APPROVED

Dr JOHN BARNETT of the Victorian Department of Agriculture and Rural Affairs received \$1,083 to attend and present a paper to the Australasian Poultry and Feed Convention held in Sydney in October last year. His paper was titled: "A relationship between behaviour and production in laying hens".

Dr JEFF COUTTS of the Queensland Department of Primary Industries has been granted \$3,550 to attend the 36th international course on Rural Extension at Wageningen, the Netherlands. He is also to serve a two week attachment with the Ministry for Agriculture, Fisheries and Food (MAFF) in the United Kingdom. He will be attached to MAFF's poultry extension service.

Dr KATRINE BAGHURST of the CSIRO's division of human nutrition has received a grant of \$6,600 to determine the intakes, ranges of intakes, socio-economic determinants and contribution to overall nutrient intake of a range of egg and poultry products in Australia as well as to establish the relationship between intake and biomedical factors such as blood lipids and bodyweight.

Dr VIVIEN KITE of NSW Farmers' Association is to attend the World Poultry Congress in Nagoya, Japan, in September this year with the aid of a \$1500 grant. Dr Kite is to present a paper at the congress on poultry welfare problems and will meet with representatives of egg producer and marketing organisations in Japan. The congress is to be followed by a two week study tour of the Japanese egg industry.

Dr ANDY RHORER of the Purdue University, USA, will be a guest speaker at the 8th annual Egg Industry Conference set down for Brisbane in June this year. A grant of \$6,000 has been made to allow Dr Rhorer to be invited as a "Poultry Research Council Fellow" as well as allowing him to visit each State in Australia before or after the conference to present papers on the development and marketing of new egg products.

INDUSTRY PERSONNEL DEVELOPMENT AWARD: The PRC is to give favourable consideration to a joint application from AEMC and ACEP for two appropriate industry personnel to undertake an overseas study tour to investigate alternative systems of egg marketing. A contingency sum has been set aside pending the preparation of a detailed application and itinerary.

POULTRY RESEARCH NOTES

A review of egg industry research funded by the industry and the Federal Government through the Poultry Research Council (PRC).....

KEEPING COOL BIRDS

HOT weather knocks birds around. Yet despite Australia's warm climate, most of the work done on the problem has been overseas.

Early work at the Poultry Husbandry Unit of the Sydney University Farms, Camden, has found the problem to be far more complex than first thought.

Heat stress in birds also involves feeding times and feeding methods plus a host of factors related to their housing.

Keeping temperature changes smooth and steady has also been isolated as a factor. Birds can even function in heat waves if they have time to adjust to the temperature changes.

However, changes in egg weights have been found to be relatively independent of feed intake and more related to heat.

"Heat stressed birds continue to eat during the daily period of high temperature. Extending the light period into the cool of the evening did not improve food intake or egg production," the Camden group found.

Under controlled environment conditions, the Camden work quickly established that laying performance at high temperatures can be improved by changing diets.

SMOKED EGGS FOR A DIFFERENCE

As the dairy industry has found, one of the best marketing tools to the consumer is to offer diversity along a theme.

That is, to offer the consumer a choice. The dairy industry found that whole milk, a previously stable marketing product, could be more widely sold with the addition of flavours. Skim milk and low fat milk have all helped lift overall consumption of the one product - plain milk.

What does the egg industry offer? Apart from different sizes there is little diversity in whole or shell eggs. Egg products such as frozen and dried mixes are different as are further processed egg products. The industry has made some major advances in these areas in recent years.

But whole shell eggs! What about smoked eggs? That is eggs with a smoked flavour that are pre-cooked and can be eaten on the run by busy working people. The plain boiled egg served whole or in a sandwich is about the only offering available at present.

A smoked egg, a tub of yoghurt and a carton of flavoured milk could be the executive or busy working-girl lunch of tomorrow. More eggs and more milk sold.

The Animal Products Technology branch of the Division of Animal Production of the W.A. Dept. of Agriculture has been successfully working towards creating flavoured eggs in recent years.

And the results are encouraging. Flavours can be infused into whole eggs quite successfully, especially after shelling. Smoke flavoured eggs, garlic flavour and curry tastes have been tried and found, to varying degrees, to be successful.

The work, under the leadership of Dennis Roberts, has found flavouring to be commercially feasible although a number of problems still need to be sorted out.

The major concern appears to be getting evenness of flavour through the egg. Consumers want consistency in their product and therefore flavoured eggs which show variability are unacceptable. Work therefore needs to be done on this problem plus that of determining shelf life and handling characteristics.

GOOD AND PRODUCTIVE FRIENDS

FEAR of humans among caged birds has been clearly identified as a cost factor to the industry.

Work done by Barnett, Hemsworth and Johnson at the Animal Research Institute, Werribee, Vic, has clearly demonstrated that the top layer of birds in a three-tiered cage system have a greater fear level than those in the two lower tiers.

The fear of humans has been found to cause up to a 21 per cent variation in hen day production and a 28 per cent difference in egg mass over time.

Why then do birds at different levels have different fear rates and reactions?

No-one yet knows but the Werribee team is trying to find out. Their early work showed the top tier reacted by turning away and going to the back of the cage. Chemical tests proved that this behaviour was a response to fear.

Surprisingly, the tests found that while the adverse reaction to humans remained firm over a ten week trial period, the fear of foreign objects diminished.

However, the early work shows that much more work needs to be done to establish what farmers should do to reduce the level of fear in their hens.

KEEPING A BETTER HOUSE

SUB-STANDARD housing in poultry production has been estimated to cost the industry around \$8 million a year or around 5¢ a dozen.

A report prepared in 1986 by the Standing Committee on Agriculture called on the industry to adapt local and overseas work on housing in an effort to improve performance.

The research has been done. The problem is now an economic one. What are the likely costs and benefits of upgrading the standard of poultry housing? How much can individual farmers afford to spend? To answer these questions we need to measure and record the environment and the performance of flocks in a large number of sheds before and after modification.

The Poultry Research Council has provided funds for the employment of a farm building specialist and the purchase of 40 electronic instruments to help State Dept. of Agriculture extension workers collect these measurements on commercial farms.

Armed with this information it will be possible to prepare more accurate budgets for farmers. A computerised data base will also be established to assist in the design of more cost-effective buildings in the future.

Farmers who would like to be part of this project should contact their State Department of Agriculture Poultry Branch or the project supervisor, Mr Marcus Foster (Ph: 03 74 1130).

STUDY TOUR REPORT ON POULTRY HOUSING

The Research Council has recently received the report of Gerry Bolla, livestock officer (poultry) at Gosford with the NSW Dept. of Agriculture. The report offers great insights from overseas on developments which can be used locally.

The report, running to nearly 90 pages, covers a wide range of aspects of European poultry housing systems.

It draws some conclusions and recommendations for the local industry recognising that Australian conditions are different - particularly climatically.

The key findings of the Bolla study were that the local industry needs to look more thoroughly at the whole area of shed ventilation.

The report recommends that the high speed inlet jet principle for shed ventilation be examined and that sheds be sealed and insulated to retain warmth in cold weather.

The Bolla report urges the industry to promote the use of a wide range of measures designed to improve shed environments for birds including fully controlled environment sheds and automatically controlled natural ventilation.

Copies of the report can be obtained from Gerry Bolla, NSW Dept. of Agriculture, P.O. Box 720, Gosford, NSW, 2250 or (PH: 043 28 0317).

FINE TUNING EGG WEIGHTS

GETTING the right egg weight is relatively easy once you know how. Knowing how requires a knowledge of what causes egg weights to vary.

The poultry husbandry unit of the University of Sydney, at Camden, began looking at egg weight variations 8 years ago.

Early work soon established that traditional layer diets of wheat, sorghum, meatmeal and soyabean meal lack a vital element which affects egg weights - Linoleic Acid.

Rice pollard has been found to be a good source of the acid and one easily incorporated into layer diets.

The Camden work also found egg weights can be manipulated over a four week period by changes in the diet of the layer and the levels of linoleic acid involved.

Yours sincerely,



NEIL INALL