



EGG INDUSTRY RESEARCH AND DEVELOPMENT COUNCIL

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NEWSLETTER

10th December 1990

Another year has passed and the Research council has changed its name again! Our Executive Officer has finally found a permanent home, the new levy collection arrangements are operative, the 1989/90 Annual Report has been completed and we have had a resignation from the Council. More importantly, while administrative matters affect the Council's efficiency and daily operations, research is what the Council is principally about and the research program has progressed very well.

NEW HOME FOR COUNCIL EXECUTIVE OFFICER

Council's Executive Officer, Mr Hugh McMaster, has moved to a permanent office in Kogarah, a southern Sydney suburb. His address is:

1st Floor
9 Station Street
Kogarah.

Postal Address: PO Box 237, Kogarah NSW 2217
Telephone: (02) 588 5211
Facsimile: (02) 588 4831

Hugh's secretary is Mrs Jan Floyd.

ANOTHER NAME CHANGE

Since the 3rd July 1990, the Council's name has been the "Egg Industry Research and Development Council" - abbreviated to EIRDC. The Council is one of four Councils operating under the auspices of the Rural Industries Research and Development Corporation (RIRDC). This change in name is a direct result of the Commonwealth Government's decision to corporatise all rural industry research councils. During the corporatisation process, selection of members of EIRDC was necessary. The Selection Committee re-appointed all members of the previous research council, so continuity was maintained. With a new home and a new name we look forward to even better things from our research council! Regrettably, Lindsay Bell has recently resigned from the Council for family reasons. His long service on the Council is greatly appreciated. An advertisement inviting applications to fill the vacancy created on the Council will soon appear in national newspapers.

THE 1990/91 RESEARCH PROGRAM

At its budget meeting held on the 4th - 5th April 1990, the Council recommended a total expenditure of \$1,140,676. The program was approved in June by Mr John Kerin, Minister for Primary Industries and Energy. Fourteen new projects were jointly supported with the Chicken Meat Research and Development Council

The total research program for 1990/91 is detailed in the 1989/90 Annual Report of EIRDC. Some of the new projects supported included:

- Disease - five projects on Newcastle disease, and one on mycoplasma gallisepticum
- Nutrition - evaluation of an egg production model; diet manipulation to alter fatty acid/cholesterol content of eggs in the shell
- Public Health - significance of listeria monocytogenes in eggs and egg products
- New Products - pilot scale production of lysozyme and avidin; egg-based animal repellents
- Cholesterol - cholesterol reduced yolk; interaction between cholesterol and other dietary fats in humans
- Shell Quality - further basic research
- Genetics - selection to increase ovulation rate; molecular genetic engineering in breeding
- Travel - both overseas and local travel for Australian researchers, including attendance at the Poultry and Feed Convention in October 1990.

ANNUAL REPORTS - 1988/89 AND 1989/90

The Egg Industry Research Council Annual Report for 1988/89 was available to producers in early 1990 and the 1989/90 Annual Report will be tabled in Parliament and distributed this month.

During 1989/90, \$823,313 was spent from the Egg Industry Research Trust Fund, compared to \$673,977 in 1988-89.

As well as providing summaries of all the research projects undertaken in 1988/89 and 1989/90, the annual reports provide statements of Receipts and Expenditure for the Egg Industry Research Trust Fund, comments on the Council's Five Year Plan, Council Strategies, Chairman's Overview and Council Membership. A list of publications arising from research projects is included as an appendix.

CHOICE FEEDING

In the second newsletter from the Poultry Research Council in early 1988, there was a report titled "Choice Feeding - it Works!" Few, if any, layer farmers took up Dr Rob Cumming's results and commenced choice feeding their birds.

During the last three years, research has continued into scientific aspects of choice feeding, and field trials have been conducted by NSW Agriculture and Fisheries. The latter showed some encouraging results which were discussed with producers at "open days" at Seven Hills Agricultural Station, but this method of feeding has not been taken up commercially.

The most recent initiative of the Council, together with the Chicken Meat Research and Development Council, was the sponsoring of a seminar to re-examine the whole question of choice feeding. The meeting was held on the 14th November 1990 and was attended by researchers, Council members and a number of egg producers and broiler industry representatives from around Australia.

The outcome of the November seminar was positive. It was agreed that there were sufficient unknowns to justify further research in a number of areas, e.g.

- . the use of grain legumes in choice fed diets
- . the composition of protein concentrates
- . the way in which calcium is presented to the birds
- . preference by birds for certain grains
- . behavioural aspects - feeding habits, conditioning time required for birds to adjust to the feeding system
- . feed delivery systems
- . economic appraisal of the benefits of choice feeding.

However, the most significant recommendation to emerge from the seminar was that it was essential to conduct a full commercial trial on choice feeding on a producer's farm. The aim of such a trial would be to demonstrate that choice feeding is a practical and economically viable way to feed layers in cages.

The results of such a trial should show the dollars saved per dozen eggs using choice feeding compared with standard feeding practices.

The Council will be discussing this matter early in 1991.

RESEARCH BRIEFS

Australian Rural Research in Progress (ARRIP) Database

This database was developed and is updated and maintained by the Commonwealth Department of Primary Industries and Energy. Council's contribution to this project is less than \$1000 a year.

ARRIP is rapidly becoming a very valuable tool for research and extension workers, research managers and funding organisations alike. ARRIP provides rapid access to up-to-date information on rural research in progress throughout Australia, promoting better co-ordination of rural research, reducing unnecessary duplication and contributing to the effective use of funds allocated to rural research in Australia.

The end of the infectious coryza story

In the July 1989 Newsletter, we reported on the success of the development of the infectious coryza vaccine, and also on the emergence of a new strain (serovar) of the disease organism. Council supported Dr Pat Blackall from the Queensland Department of Primary Industries for a further year to determine whether or not the vaccine would protect against this new serovar. Dr Blackall established that the current commercial vaccines available in Australia were effective against all serovars of infectious coryza known in Australia. His final report is available from the EIRDC Executive Officer.

Newcastle disease (ND)

There is always something new emerging with Newcastle disease. Five groups of researchers are looking at different aspects of ND. One of the latest projects to be supported is being supervised by Professor Peter Spradbrow at the University of Queensland. A long-time, successful recipient of poultry research funds, Professor Spradbrow is examining ND viruses isolated in Australia and their possible role in respiratory diseases in chickens. Over the last 3 - 5 years there have been suggestions that ND viruses interact with other viruses causing significant losses in productivity. Little is actually known about how serious (pathogenic) ND virus strains currently in the Australian flock are. Dr Spradbrow's research should help significantly in this respect.

Infectious laryngotracheitis (ILT)

ILT has been around for a long time and can be the scourge of layer and broiler farmers alike. George and Edla Arzey, veterinarians with NSW Agriculture and Fisheries, have been involved in field studies to look at the A20, UP and SA2 strain vaccines, and to determine just how good they are.

the A20 strain vaccine was used on 11,500 started pullets at 7 days old. No adverse effects due to the use of the vaccine were seen and the pullets were still protected 7 weeks after vaccination.

All birds on nine commercial layer farms were vaccinated with SA2 at an early age. At end of lay, protection of flocks varied from 50% in unvaccinated "control" flocks to 100% in flocks vaccinated twice. After one vaccination, 80% gained protection.

This research will continue in 1990/91 and prospects look good.

Gene mapping really isn't science fiction

At the CSIRO's Division of Animal Production (located at North Ryde and Blacktown, in NSW) Dr Bruce Sheldon is supervising research entitled "National Gene Mapping Project". He hopes to produce genetic maps of important production genes and associated marker genes in poultry, hopefully to improve the efficiency of poultry breeding by selection or gene transfer.

When we read about deoxyribonucleic acid (DNA) markers, restriction fragment length polymorphisms (RFLPs) and variable number tandem repeats (VNTRs), science fiction seems to creep in. Dr Sheldon tells us that his project is certain to produce significant new knowledge on the chicken genome and its linkage relationships. Combined with results from other laboratories, this knowledge must improve the efficiency with which the chicken genome can be manipulated for poultry breeding.

Dr Sheldon is an internationally respected genetics research scientist and we, as lay people, should believe in him. Our research council members do!

How well is poultry housed in Australia?

Mr Marcus Foster and Mr Robert Smart, both engineers, have been supported jointly by the egg and chicken meat research councils since August 1988 to monitor and evaluate the environment in layer and broiler sheds. Large scale monitoring with use of "dataloggers" has taken place in New South Wales, Queensland, Victoria and South Australia. There appears to be a big difference in the winter performance of sheds, and many sheds fail to maintain warm temperatures during the winter months. Some of those that are maintaining warmth appear to be doing so at the expense of air quality as carbon dioxide and ammonia build up in the sheds. The researchers intend to provide field workers - agricultural department extension officers - with user friendly computer software that will let the dataloggers be used for on-farm trouble shooting after the project is completed.

Controlled atmosphere storage of eggs to replace refrigeration?

Professor Paul Baumgartner and Mr R Greig at the University of Western Sydney, Hawkesbury, have completed a project to see if storage of shell-eggs in an atmosphere of carbon dioxide could provide an alternate to refrigerated storage. They have shown that a carbon dioxide level as low as 2.5% in air is all that is needed to maintain high Haugh units and yolk indices even after storage at 20°C for 42 days. Generally speaking the research has shown that controlled atmosphere storage has great potential and may become an alternative to cold storage of eggs if storage is for periods of approximately 2 months or less at normal room temperatures. Storage costs could therefore be greatly reduced.

REVIEW OF RESEARCH RESOURCES

This review, mentioned in the last newsletter, has proceeded very well during 1990 and Drs Bob Pym and Bill Callow, have provided an interim report to the Council. It is hoped that this project will be completed by the time the Council meets in April 1991.

As part of the study of research resources, a questionnaire was prepared to assist Council in identifying needs and priorities, both in terms of topics and of researchers to carry out the work. The questionnaire was sent to industry people in producer and marketing organisations, poultry companies, State and Federal government departments and universities. Responses to the questionnaire have been analysed and examined by Council. Council has spent some time in reassessing its R&D priorities as a result of this exercise.



STOP PRESS: Mike Evans off to Glasgow

Mr Michael Evans, one of Council's Junior Research Fellows, is to spend a month in Scotland with Dr Sally Solomon who heads up the poultry research group at the University of Glasgow. The Glasgow group has developed the technology to identify, classify and quantify the structural traits that enhance and reduce egg shell performance. Mr Evans will take more than 600 egg shell samples to Glasgow and prepare them for analysis. This involves plasma preparation and gold coating of the shell samples. He will spend time learning the skills necessary for use of the scanning electron microscope for egg shell structural analysis and analyse as many of his specimens as possible.

On his return to Armidale, Mr Evans will be able to introduce this newly learnt technology to the University. In his current work Mike Evans is investigating the effect of both natural and synthetic zeolites on egg shell quality.



All Research Council members serve on a part-time basis and devote much of their own time and energy to Council matters. I thank them for their efforts. On their behalf may I as Chairman, wish you all a happy Christmas and a bright and prosperous 1991.

David J Smith

Dr David Smith
Chairman

