

FRDC FINAL REPORT

INCREASING PRODUCTIVITY IN TROPICAL AQUACULTURE

- AN INDUSTRY WORKSHOP

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BACKGROUND

Growth and investment in the aquaculture industry in tropical Australia has been much slower than expected despite the availability of suitable land and a warm climate. The reasons for the poor financial attractiveness of aquaculture is well illustrated by the prawn farming industry in Queensland. The pond area of operational farms in 1991/92 was about 250 hectares and produced an average yield of 3.4 tonnes/hectare as compared to a potential 6 to 8 tonnes/hectare if overseas production technology could be adopted. This poor use of the enormous capital investment in ponds is the chief reason for lack of profitability in the industry.

Poor production stems primarily from the lack of practical knowledge of appropriate production technologies throughout industry and its supporting organisations. Development of farming techniques has been largely undertaken by the farms themselves, with variable results.

While several agencies (QDPI, CSIRO, AIMS and universities) have considerable resources devoted to aquaculture research, little attention has been given to practical on-farm production issues that arise because of regional variations in factors such as rainfall, soil type, water quality and temperature. In South-east Asia practical growout methods based on sound research have enable farmers to adapt to local conditions. In Australia most farmers and researchers lack this technical knowledge and as a result Australian aquaculture production is hampered by sub-optimal survival and growth of the target species.

AIM

This project, by convening an industry workshop with leading Thai aquaculture authorities aimed to substantially improve Australian aquaculture production through technology transfer from South-east Asia.

DISCUSSION

This project was jointly funded by the Fisheries Research and Development Corporation, the Australian Mariculture Association, the Australian Prawn Farmers Association and the Queensland Department of Primary Industries. The FRDC funding covered airfares, accommodation and consultancy fees of Dr Chalor Limsuwan of the Faculty of Fisheries, Kasetsart University. Dr Limsuwan is recognised in South-east Asia for having given pond production techniques a scientific basis and has been responsible for the massive improvements in pond production efficiencies in Thailand over the past five years.

Funding from the other parties mentioned above enabled Mr Pinij Kungvankij a Senior Consultant with the Charoen Pokphand (CP) group of companies, to also transfer information to Australian farmers. Mr Kungvankij has been associated with aquaculture for many years as a researcher, a project consultant for FAO and a management expert developing aquaculture projects in South-east Asia. CP is the largest producer of prawn feeds in Thailand and also runs it's own prawn farms.

AUSTRALIAN MARICULTURE ASSOCIATION CONFERENCE - 3 AND 4 JULY 1993

It was anticipated that both Dr Limsuwan and Mr Kungvankij would present talks to a wider audience of farmers and researchers during the AMA Conference. However, due to a serious illness Mr Kungvankij was not able to come to Australia for the conference or the following workshops instead he arrived later in the year for extension visits to prawn farms in the different geographical regions.

Dr Limsuwan presented talks featuring his own and Mr Kungvankij's material with the broad headings of:

1. Developments in Asian aquaculture.
2. New intensive pond production techniques in Asia.
3. Control of effluent quality.
4. Relevance to Australia aquaculture.

These talks were well attended and resulted in a significant information flow to both farmers and researchers on current practices in South-east Asian prawn farming.

PRAWN FARMERS WORKSHOP - 5 AND 6 JULY 1993

This workshop was for members of the prawn farming community only and was not open to researchers. Dr Limsuwan conducted the workshop and presented information on the farming techniques used in Thailand - covering all aspects from site selection to disease avoidance. Judging by the number of questions asked by the farmers the information was new and of great benefit to their farm operation.

PUBLICATION ARISING FROM WORKSHOP

The information synthesised from Dr Limsuwan's workshop was published as Aquaculture Sourcebook No. 11 titled, Improving the productivity of prawn ponds: A prawn farming manual for Australian growers (O'Sullivan and Thomas, Editors), Turtle Press 1994, 62 pp.

CONCLUSION

Both the Prawn Farmers Workshop conducted by Dr Limsuwan and the farm extension visits by Mr Kungvankij had significant effects on pond management by passing on intensely practical methods for reducing costs and increasing productivity. In the year following the workshop (1993/94) the productivity of black tiger prawns/hectare of pond/crop was 4700 kg (Lobegeiger, 1995). This represents an increase in production per hectare of 31% as production had been static at approximately 3500 kg/ha for the previous three years. It would perhaps be overly optimistic to correlate the increase in productivity solely with the visits by the Thai experts, but it would also be foolish to deny that the information transferred to the Australian prawn farmers led to increased productivity and reduced costs in the farming of black tiger prawns. The increase in the harvest of black tiger prawns due to increased productivity alone added approximately \$3.3 million to the

value of the industry. If the information transferred during the industry workshop accounts only for a small percentage of this it is obvious the exercise has still been extremely successful.

ACKNOWLEDGMENT

I would like to acknowledge the contribution of Dr Noel Gillespie, Secretary of the Australian Mariculture Association and Officer-in-Charge of the Bribie Island Aquaculture Research Centre. His foresight led to this workshop which helped industry enormously. Noel was unable to compile this report as he was seriously ill and sadly for us all passed away in 1994.

REFERENCES

Lobegeiger, R. 1995. Aquaculture Production Survey, Queensland 1993/94, Queensland Department of Primary Industries, 11pp.