

RURAL POULTRY E-NEWSLETTER



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Southern Africa Newcastle Disease Control Project Update - October 2003 – March 2004

The project reached its halfway mark during this period and our work rate continues to maintain a hectic pace. We have been grateful for the interest and good humour of all who have assisted with:

- The Second Project Coordinating Committee Meeting held in Dar es Salaam, Tanzania, which brought together representatives from Malawi, Mozambique, Tanzania, SADC, AusAID and GRM International;
- An administration workshop held at INIVE, Maputo;
- The training of extension workers and community vaccinators in Mozambique and Tanzania;
- Two more ND vaccination campaigns in project areas in Mozambique and Tanzania;
- The monitoring and evaluation of ND control activities;
- Conducting of the second round of base-line studies in pilot areas in both Mozambique and Tanzania;
- The national planning workshops and curriculum review workshops in both Mozambique and Tanzania;
- The upgrading of laboratory facilities and establishment of a project office in Malawi; and
- Facilitating inputs by an extension advisor, a poultry specialist, cost-recovery/administration advisors, a gender advisor and an M&E advisor.

Project staff have enjoyed receiving e-mails from colleagues working with village poultry in many parts of the world and we hope that this exchange of ideas will continue. We are pleased to welcome Dr Mary Young as a Long Term Advisor to the project; she will be based in Tanzania.

*Robyn Alders, Team Leader, SANDCP
Maputo, Mozambique, E-mail: robyn@tropical.co.mz*

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Comparative advantage of a thermotolerant I-2 vaccine in the control of Newcastle disease in village chickens in Ghana

BACKGROUND INFORMATION

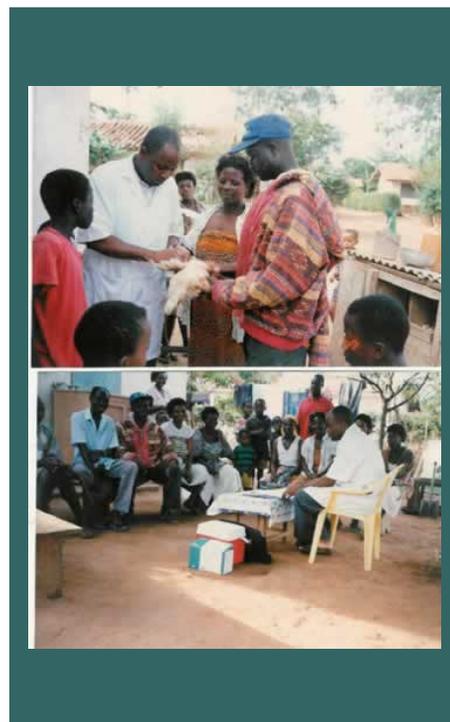
Village chickens play a very important role in poverty alleviation and the improvement of family food security, especially among the rural population in the country. Village chickens form over 80% of the total poultry population of the country. However, the development of rural poultry production has been hindered by numerous factors, the most significant of which is Newcastle disease. Field estimates indicate that over 80% of the rural chicken population is lost annually due to outbreaks of Newcastle disease, which can be controlled only through effective vaccination.

The use of conventional heat-labile, commercial poultry vaccines, to control Newcastle disease in village chickens has not been practicable because of the difficulty in maintaining a proper cold chain in the rural areas as well as the unconfined system of rural poultry production.

Introduction of the thermotolerant I-2 Newcastle disease vaccine, which has been tested and proven efficacious in the control of the disease, is the way to improve rural poultry production in Ghana. It was, however, not fully accepted by farmers and field veterinary personnel at the initial stages. This is because, before now, an inactivated oil-adjuvant vaccine was used to control the disease in village chickens. There was therefore an urgent need to carry out comparative studies to establish the advantages of using the thermotolerant I-2 vaccine over the inactivated vaccine.

TRIAL PROCEDURES

Three districts were chosen for the trials and in each district, four villages were selected as trial sites. In one village all village chickens were vaccinated with the inactivated vaccine by subcutaneous injection, in another the I-2 vaccine was used via eye-drop route and in the third the I-2 vaccine was administered by feather brushing of the eye. The chickens in the fourth were not vaccinated (control group). The inactivated vaccine was administered only once, as has always been the practice. The I-2 vaccine was repeated after three and six weeks.



RESULTS

The vaccinates and the controls were monitored serologically as well as by field monitoring of the birds over the peak Newcastle disease outbreak period in the country. The serological results are shown in the table below. As an HI titre of 2³ is indicative of protection against Newcastle disease, the I-2 vaccine is equally as effective as the inactivated vaccine.

AVERAGE OF HI TITRES TO LOG BASE 2

(Weeks)	Controls (GMT)	Inactivated Vaccine (GMT)	Thermotolerant I-2 vaccine adm. by	
			Eye-drop (GMT)	Feather brushing
0	1.8	1.9	1.8	1.5
3	1.9	3.8	3.2	2.5
6	1.8	4.5	3.8	2.8

Field surveys also showed 100% survival rate of all chickens vaccinated with the inactivated vaccine and the I-2 administered via the eye-drop route. The thermotolerant I-2 vaccine has the added advantage of requiring little expertise in its administration and hence farmers can vaccinate their own flocks. This will lead to relatively wider vaccination coverage.

Cost benefit analysis also showed a much higher net return of **13.8** as a result of I-2 vaccination via the eye-drop route as compared to **10.5** from vaccination with the oil-adjuvant inactivated vaccine. This further strengthens the comparative advantage of the thermotolerant Newcastle disease I-2 vaccine.

Acknowledgement: Funds for this study were provided by the FAO/IAEA Co-ordination Research Programme on the 'Assessment of the effectiveness of vaccination strategies against Newcastle disease and Gumboro disease using immunoassay-based technologies for increasing backyard poultry production in Africa'.

Joseph Adongo AWUNI

Accra Veterinary Laboratory, Accra, Ghana. E-mail: josephawuni@hotmail.com

Family poultry keeping in the peri-urban area of Dakar, Senegal

Introduction

The total poultry population of Senegal was estimated in 2003 to be 24.355 million, with 79% being kept in households (as family poultry). The urban human population, as a percentage of total population, increased from about 30% in 1970 to 43% in 1995, and is projected to reach 55% by the year 2015. This rapid urbanization trend is often accompanied by increased poverty, food insecurity and unemployment, especially in peri-urban areas where dwellers coming from villages mostly live. To improve their livelihoods, local populations in peri-urban areas keep poultry at household level. In Senegal, no study has been carried out so far to assess the significance of the family poultry sub-sector which co-exists with a young semi-industrial poultry sub-sector (after the country's independence in 1960).

Methodology

Two surveys were carried out in 10 locations of the peri-urban area of Dakar, the capital-city of Senegal, from September 2001 to January 2002 (Survey 1) and from July 2001 to February 2002 (Survey 2). In Survey 1, 200 households were randomly selected. The Survey 2 involved 150 randomly selected households (in which chickens were kept).

Major findings

Survey 1: Family poultry keeping is very popular. In 82.5% of the 200 households surveyed at least one poultry species (i.e. chickens, ducks, pigeons, Guinea fowls, turkeys, etc.) were reared. In the 17.5% remaining households, many of them (74.3%) had been rearing poultry in the past. Causes of the disappearance of poultry flocks were: diseases (61.5%), consumption (19.2%), theft (15.4%) and sale (4.0%). Among households in which poultry were not reared, most of them (92.3%) were willing to restart to keep poultry. Reasons mentioned were (non-exclusive percentages): income (70.8%), consumption (54.2%), special banquets for distinguished family guests (12.5%), hobby (8.3%) and gifts (4.2%).

Survey 2: Results obtained from 150 surveyed households were as follows:

Flock size: 10.9 chickens per household.

Chickens mainly owned by women (53.0%), compared to men (37.5%) and children (9.5%).

Flock demographic structure: 45.3% were chicks, 36.2% hens (adult females) and 18.5% cocks (adult males).

Management of birds was under women's responsibility (in 65.3% of surveyed households, compared to 34.7% for men)

Purposes mentioned by people for keeping chickens within their households were:

For chickens (meat): home consumption (55.3%), income (43.3%), gifts (0.7%), birds used as breeding stock (0.7%).

For hens' eggs: incubation (83.6%), home consumption (10.9%), incubation (5.5%).

The Senegalese national dish, called '*chicken yassa*', is a delicacy prepared using chickens, especially from indigenous stocks whose products are considered to be tastier and healthier (because synthetic drugs, such as antibiotics, are rarely used). *Chicken yassa* is often served as special banquets to distinguished family guests.



Family poultry keeping in the peri-urban area of Dakar, Senegal - *continued*

Benefits gained by poultry producers from this poultry sub-sector do not go exclusively to them, especially if they are women. They are distributed, directly or indirectly, to all family members, contributing significantly to the overall well-being of the members of the household. Income generated by family poultry keeping is used as follows (non-exclusive percentages): rice (45.3%), tea/coffee (10.7%), sugar (10.0%), poultry feeds (5.3%), acquisition of other poultry (8.0%), bread (10.0%), children's textbooks (4.7%), "tontine" (community savings system) (9.4%), shoes/clothes (30.0%), oil (21.3%), soap/medicines (10.0%), other domestic goods (12.0%).

Family poultry are a valuable asset to local populations in the peri-urban area of Dakar, Senegal, because they contribute significantly to food security, poverty alleviation and employment, especially in disadvantaged groups.

E.F. Guèye¹, E. Cardinale^{2*}, M. Cissé¹, D. Mandiamey¹, A. Dieng³ and C. Ly⁴

¹Senegalese Institute of Agricultural Research (ISRA), B.P. 2057, Dakar-Hann, Senegal, E-mail: efgueye@refer.sn; ²Center for International Cooperation in Agronomic Research for Development (CIRAD), EMVT, TA 30/A Campus International de Baillarguet, 34398 Montpellier Cedex 5, France (Present address ¹); ³National High School of Agriculture (ENSA), B.P. A296, Thiès, Senegal; ⁴Inter-States School of Veterinary Sciences and Medicine (EISMV), B.P. 5077, Dakar, Senegal.

Acknowledgement

Support provided by the "Fonds National de la Recherches Agricoles et Agro-Alimentaires (FNRAA)" is gratefully acknowledged.

Conferences coming-up

5th Asia Pacific Poultry Health Conference

When?	21st and 22nd April, 2004.
Where?	Held on the Queensland's Gold Coast. The two day meeting will be held in the ANA Hotel in Surfer's Paradise and will follow on from the PIX conference being held in the same venue.
Theme:	The theme for the conference has been set as " Harnessing Science for Poultry Production ". The theme emphasises the thrust of the conference – to showcase how Asia-Pacific poultry health scientists are harnessing the power of modern veterinary science to provide practical advances for poultry production.
Program:	The meeting will consist of plenary sessions on both mornings and concurrent sessions on both afternoons. The meeting will address key issues impacting poultry health and poultry production in the Asia-Pacific region. The plenary sessions will cover major topics such as: Newcastle Disease, Avian Influenza, Innovations in the control of <i>Salmonella</i> and <i>Campylobacter</i> , New Concepts in Disease Control, <i>Salmonella</i> enteritidis, vv Infectious Bursal Disease, The Australian Approach to Poultry Research – A Unique Concept. Concurrent sessions will cover such topics as: Respiratory Diseases – Viruses and Mycoplasmas, Antibiotics in poultry production and human health, Village chickens, Immunosuppressive Viral Diseases, Bacterial diseases, Parasitic diseases.
Contact:	We will be actively seeking proffered papers – both as oral presentations and as posters. To be placed on the update list for this meeting, please register your interest by contacting: The AVPA Secretary or Pat Blackall, Scientific Program Convenor, APPHC 5 Animal Research Institute, Locked Mail Bag No 4, Moorooka QLD 4105, Australia. Fax 07 3362 9429. Email pat.blackall@dpi.qld.gov.au

WPC 2004 XXII World's Poultry Congress

When?	June 8-13, 2004
Where?	Istanbul – Turkey
Program:	The scientific program of the World Poultry Congress consists of 38 sessions covering various topics. Each session combines two invited presentations, five submitted oral presentations, and discussion of submitted posters.
Contact:	Official Congress Organizers ITU CONSORTIUM Address : Mete Cad. Yeni Apartmany No:16/11 34437 Taksim Ystanbul TURKEY Phone : +90 (212) 244 71 71 Fax : +90 (212) 244 71 81 Email : wpc2004@wpc2004.org Web Site : www.wpc2004.org

Bangladesh Smallholder Livestock Development Project

The Smallholder Livestock Development Project in five Southern Districts of Bangladesh provides income generating opportunities to poor landless people through a combination of technical training in smallholder poultry techniques and the provision of micro credit. It is funded by DANIDA and administered through the Department of Livestock Services of the Ministry of Fisheries and Livestock. A coordinated integrated village poultry system comprising ten different enterprises is used. In the central enterprise 'key rearers,' comprising 95% of the farmers, keep just five crossbred layers adapted to semi-scavenging conditions. They receive a small 'cafeteria system' feed supplement, but the majority of the feed for egg production comes from scavenging. In addition the farmers keep local broody hens to hatch out layer chicks in a specially designed high capacity egg setting box. The hatching eggs come from a small number of small scale 'model breeder' parent farms. Feed supplementation is given to the hatched chicks through a creep feeder system. The crossbred layer chicks can also be raised in batches of 300 by 'chick rearers.' In this case the chicks are supplied from a government breeding farm and hatchery. All vaccinations are supplied by 'poultry workers' who make a small charge for each vaccination. Feed sellers and egg sellers complete the integration of the system. Some farmers raise ducks instead of chickens, and 'mini hatcheries' using the rice husk method can be used for hatching duck eggs. The total target is more than 100,000 people, and the training and credit disbursement is contracted to local non government organisations under the supervision of the project management team and area coordination officers.



Jonathan Bell
Senior Advisor
E-mail: sldp2@cyberbangla.com

The Chook Book (by Jackie French, \$13.95 Australian, 1993, Aird Books).

I love chooks [i.e. chickens in Australian English]. It gives you a feeling of safety and security. **No matter what disasters are around you've got eggs and meat and entertainment down in your backyard.**

I think I began to love chooks and eggs at my great grandparents' household. Together with my great aunt they went through at least two dozen eggs a day - fried or poached eggs for breakfast, with perhaps a toasted scone from the day before; pikelets for morning tea; a ham and egg pie for lunch or egg and lettuce sandwiches, with stewed fruit and custard (which had even more eggs in it than the ham and egg pie); sponge cake or tiny cream cakes and lamingtons for afternoon tea; a roast for dinner (chook preferably) with lots of veg and more stewed fruit and custard or pavlova or icecream - I had home made icecream there for the first time, richer in eggs than anything else we'd eaten the whole day.

The eggs- and the chooks- came from the backyard, and their clucking was a happy background as we ate our cream cakes for morning tea. The hens ate the scraps and the weeds and snails and elderly lettuces or cabbages from the garden and their manure fed my great grandfather's prize dahlias. In fact I think that is most treasured memory of my great grandparents- my great grandfather's calloused hands resting on his massive belly while the two women passed him plate after plate of cake and the hens cackled out the back. They died in their nineties, soon after each other, and I don't know what happened to their chooks. Later I discovered the joy of living with my own chooks- White Leghorns all dignified and brainless, canny Australorps scratching through the asparagus; big bummed domestic Rhode Island Reds pecking the woolly aphids from the apple trees; Perce the Chinese Fighting Cock who attacked everything male- but only from behind; Rodney rooster proud and cocky, all fifties brilliantine and black and green feathers strutting like he owned the world. It's no coincidence that most peasant cultures include chook keeping. Backyard chook keeping makes sense. Everyone can keep hens. Even if you haven't optimum conditions, they will still be better than those that battery hens experience- crammed in small wire cages and fed with antibiotics to keep them alive. Anyone who eats eggs or hens from the battery poultry industry helps keep this system going. Instead- have a brood of cluckers pecking by your back fence.

I'd hate to be without chooks now. I love the domestic sound of chooks clucking. I love roosters crowing at dawn. I also love not having to worry about the pests that they clean out of the orchard; wondering what to do with meat and prawn heads and other scraps (chooks are so much easier than compost). I love their eggs. I love their meat. But most of all I just love chooks. Why You need Chooks. Chooks will give you the sort of egg you can rarely buy; meat that hasn't been seen commercially for thirty years; manure for your garden, they solve your compost problems and give infinite pleasure. They'll also save you money.

Obituary

Abdul Jalil Ambar



Mr. Abdul Jalil Ambar was born on October 2, 1940, in Comilla, East Bengal in British India. He died on February 26, 2004 in Dhaka, Bangladesh, from heart failure.

Jalil Ambar, as he was generally known, played a pivotal role in research and development of village poultry in a career that spanned forty years. He graduated in Veterinary Science and Animal Husbandry from the Agricultural University, Mymensingh in 1963. His first posting was on research in poultry breeding at the same University. He then joined the Directorate of Livestock Services, where he had increasing responsibility in the management of poultry farms. Perhaps the greatest of his research achievements was the breeding research that led to the establishment of the 'Sonali' hybrid layer, which combined high egg production under semi-scavenging conditions with an appearance that integrated well under village conditions.

He served as Project Director for a number of projects, including two for the establishment of new duck farms. The best known of these projects was the original Smallholder Livestock Development Project, which led to the development of the integrated village poultry production system known as the Bangladesh poultry model. He was responsible for imparting a finely developed science of village poultry production to thousands of young people, who in turn passed it on to many fold more people, through training in the Participatory Livestock Development Project, and then in the Smallholder Livestock Development Project in five Southern Districts, where he was Breeding Farm Consultant. Just two days before his death he was working at the breeding farm; he had said that he was always happy when he was working at the farm.

Jalil Ambar had a phenomenal capacity for mental arithmetic, which put to shame those who grew up in the time of electronic calculators – let alone computers. He displayed impeccable integrity throughout his professional life, although he had to work at times in an environment where this was not shared by all. He had an endearing simplicity in some ways. It is said that as a Project Director he was engaged in a discussion with a contractor over the cost of some works, when the contractor pulled out his mobile phone to consult with his partners. Thinking he was being threatened with a weapon, Jalil Ambar immediately assented to the demands of the contractor!

Jalil Ambar was a man who was always ready to meet his Maker, so although he left suddenly, we may say that he was prepared. He is survived by his wife, daughter and four sons.

Village chickens, food security and HIV/AIDS mitigation

Village chickens can be found in all developing countries and play a vital role in many poor rural households. For instance, they provide scarce animal protein in the form of meat and eggs and can be sold or bartered to meet essential family needs such as medicine, clothes and school fees. Village chickens are active in pest control, provide manure, are required for special festivals and are essential for many traditional ceremonies. The chickens are usually raised under extensive, low input production systems (Table 1). They are generally owned and managed by women and children and are often essential elements of female-headed households.

Table 1: Comparison of village and commercial chickens.

Feature	Village Chickens	Commercial Chickens
Labour inputs	Minimal	Considerable
Housing	Trees; chicken houses of local material; inexpensive	Chicken unit using conventional materials; expensive
Nutrition	Scavenging feed resource base, leftover food, cereals, no supplements; inexpensive	Balanced commercial ration; expensive
Water	Well water, used water, natural sources	Clean water supply essential
Production	Low; could improve with better nutrition, disease control and shelter from predators	High; but require a high level of inputs
Meat quality	Little fat; pleasant flavour; preferred texture	More fat; less flavour; poorer texture
Adaptability	Good: good flight skills, more likely to escape predators, can scavenge for own food	Limited: poor flight skills, easily caught by predators, less skilled at scavenging
Veterinary inputs	None; ND vaccination	Control of many viral, bacterial and parasitic diseases essential for efficient production
Environmental impact	Minimal: can be positive through provision of organic fertilizer and pest control	Negative: intensive production of cereals for rations; occasional improper use of antibiotics, excess ammonia production.

Village chickens, food security and HIV/AIDS mitigation

Continued

In households affected by HIV/AIDS, where labour is in short supply, village chickens provide a source of high quality nutrition and income without requiring much in the way of labour or financial inputs. Eggs, in particular, offer a great nutritional bargain: they contain approximately 315 kilojoules and are one of the best quality protein sources known. Eggs also supply an array of vitamins such as A and B12, and they are one of the best food sources of vitamin K, a bone-boosting nutrient. Eggs also provide choline, a B vitamin that plays a role in brain development.

When considering supporting village chicken production, it is advisable to perform a situation analysis to determine:

- What is currently happening with village chicken production in the target areas?
- What are the current constraints to production?
- What options are available to reduce the impact of the identified constraints?

One of the major constraints to production of village chickens is Newcastle disease (ND). In countries where ND is enzootic, outbreaks of this disease regularly result in mortalities of 50 to 100 %. In developing countries where ND is not enzootic, outbreaks may occur less frequently but potential losses due to the disease make vaccination mandatory. The implementation of an effective ND control program in countries such as Mozambique, has resulted in increased chicken numbers, increased household purchasing power, increased home consumption of chicken products and increased decision-making power for women. Experience has shown that a sustainable ND control program is composed of five essential components: a) an appropriate vaccine and vaccine technology; b) effective extension materials and methodologies that target veterinary and extension staff, community vaccinators and farmers; c) simple evaluation and monitoring systems; d) economic sustainability based on the commercialisation of the vaccine and vaccination services and the marketing of surplus chickens and eggs, and e) support and coordination by relevant government agencies for the promotion of vaccination programs. ND control combined with improved husbandry is often the most cost-effective means of improving village chicken production.

The benefits of improved village chicken production include income generation and improved household food security. Families affected by HIV/AIDS will be more likely to make use of these benefits if veterinary services work in collaboration with the Ministries of Education and Health.

*Robyn Alders, Ana Bela Cambaza and Mohamed Harun.
AusAID Southern Africa Newcastle Disease Control Project, Maputo.
E-mail: robyn@tropical.co.mz; Website:
<http://www.vsap.uq.edu.au/ruralpoultry>*

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Guèye, E.F. 2000. The role of family poultry in poverty alleviation, food security and the promotion of gender equality in rural Africa. Outlook on Agriculture 29(2):129-136.

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<http://www.vsap.uq.edu.au/ruralpoultry/news.html>

New publication: Success story on the control of Newcastle disease in village chickens using thermotolerant vaccines

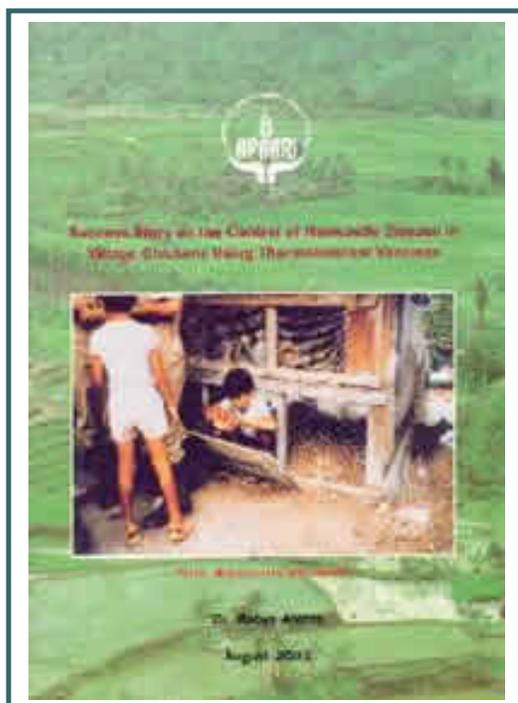
Extract from the Foreword

Since its inception in 1991, the Asia-Pacific Association of Agricultural Research Institutions (APAARI) has been disseminating information through various publications, CDs and website on the successes achieved by the researchers in the National Agricultural Research Systems (NARS) of the region, in order to promote the transfer of proven technologies for their wider application. This effort is aimed to create synergy amongst the region's NARS in achieving their common goal of maintaining food security, improving economic prosperity and sustaining natural resources through appropriate agricultural technologies.

Raising chickens, pigs, ducks and livestock along with agriculture and/or aquaculture is quite common in the Asia-Pacific region as millions of rural households traditionally practice integrated farming to minimize economic risk, ensure food security, and improve resource utilization through waste recycling. Poultry is an important source of protein in many of these countries and unpredictable outbreaks of Newcastle Disease (ND) have been one of the major constraints to village poultry production in the past. While much has been written about ND prevention in the commercial sector, little information is available on its application in the rural household sector. Several international agencies in cooperation with partner countries are now engaged in developing suitable vaccines to prevent this disease in village chickens. Since 1984, the Australian Centre for International Agricultural Research (ACIAR) has been supporting collaborative research, which ultimately resulted in the development of vaccines that are appropriate for chickens raised by rural households in varying climatic conditions.

This success story describes several vaccines and ND control programmes developed by ACIAR's collaborative research activities in the Asia-Pacific region. The case studies of the success story illustrate implementation of ND control procedures and their impact on rural livelihood in a variety of socio-economic conditions. Several useful information resources, conferences, training programmes, and agencies involved in ND control research are also listed for interested readers.

I am sure this publication will prove to be a useful resource for not only poultry researchers and extension workers, but also for all those who are involved in traditional household poultry industry in the Asia-Pacific region.



Foreword by

*R. S. Paroda
Executive Secretary, APAARI*

*Bangkok, Thailand
September 2003*

Copies of the booklet are available from:
The Executive Secretary, APAARI
FAO-RAP, Maliwan Mansion
39 Phra Atit Road,
Bangkok 10200, Thailand
Fax: +66-2-6974408
E-mail: apaari@apaari.org

Saludos de Mexico !

Tired of supermarket eggs that were far from fresh I decided to "grow my own" and put up a small chicken pen in a corner of the yard.

My granddaughter and I built a 3 x 5 foot coop out of 1/2" PVC pipe covering it with inexpensive tennis shoe material - one side PU and the other acetate in Kelly green! We put in two wooden dowels as perches and used large plastic flower pots as nests.

The pen is about 24 x 15 feet, with a large tree in the middle for shade. We stuck a 4" PVC pipe into the ground next to the tree so that we could wash the water dish comfortably and decant the old and wash water directly to the roots of the tree so as not to create a muddy place in the pen.

Here in the middle of Mexico there are no fallen leaves (very few trees) so I buy three bags of leaves brought from the northern forests and spread them around the pen so the birds have something to scratch around in and the poop gets mixed in. I plan to collect them once or twice a year to compost and put down a fresh layer.

We had one sick pullet, and did not want to medicate all of the rest along with her. Not having a place to separate her we needed a way to medicate only her - raisins..... We would dip a raisin in her medication and she loved it! Of course the rest each got one unmedicated raisin too! Each of our birds is named and recognizes her name; they all come for a treat and a pet whenever we go to the pen. All in all it has been a wonderful experience - not to mention the fantastically fresh eggs we get every day!

Every time I go to the feed store, where they have trays of day old chicks, it takes a tremendous effort not to buy another half dozen!

This chicken thing is addicting!

Sheila
sfoy@sfr.podernet.com.mz



An egg contains:

- * 315 kilojoules
- * high quality protein
- * vitamins including Vit A, B12, K & choline
- * minerals

Avian Influenza updates available from:

- www.fao.org/ag/AGA/AGAH/EMPRES/index.asp
- www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html
- www.oie.int/eng/en_index.htm
- www.who.int/en/



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We are on the web:

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