

TANUVAS TECHNICAL REPORTER

*An official publication of research and developmental activities of
Tamil Nadu Veterinary and Animal Sciences University*

EDITORIAL TEAM

Editor

Dr. N.K. Sudeep Kumar

Members

Dr. S. Balasubramanian

Dr. A.V. Omprakash

Dr. C. Manivannan

Dr. A. Shyam Babu

Dr. B. Madukesvaran

IN THIS ISSUE

- TANUVAS Aseel Chicken
- Research Highlights (2015-16)
- Products developed at TRPVB - TANUVAS

EDITORIAL OFFICE

Directorate of Distance
Education, TANUVAS,
Anna Salai, Nandanam,
Chennai - 600 035

Telefax: 91-44-2432 0411
Email: dde@tanuvas.org.in

TANUVAS ASEEL CHICKEN

The Poultry Research Station (PRS) was established at Nandanam in Chennai in the year 1941. The PRS was relocated in the present location at Madhavaram Milk Colony, Chennai- 600 051 during 2011. The major emphasis of the station is to concentrate on education, research and extension activities in poultry science. The main mandate of this station is to serve as avian species instructional farm for under-graduate and post-graduate students, supply of superior germplasm of chicken (broilers, layers, fancy birds), Japanese quails, turkeys, guinea fowls and geese. This research station is concentrating on evolving elite germplasms through advanced scientific breeding technology in chicken, japanese quail, turkey, guinea fowl and geese. During the year 2017-18 the PRS released a multi coloured plumage Aseel chicken having good disease resistance suitable for sub optimal managemental conditions.

Preamble

Native chicken are well known for their adaptability to local agro-climatic conditions, hardiness, ability to utilize locally available feed, requiring minimum care and management besides having a unique flavor and taste. In India, it is estimated that around 33 percentage of total poultry population is contributed by native chicken. The eastern and southern region of India contributes around 34.26 per cent and 32.74 per cent respectively to the total native population. The old perception that indigenous birds are not an economically viable livelihood option is no more tenable and the situation has changed. The eggs and meat of birds reared in the family poultry production fetches premium price due to high

consumer preference even in the urban sector where plenty of eggs and poultry meat from commercial units are available. In addition to the stable supply of high-quality animal food, the native chicken rearing will certainly improve the economic status of rural people and peasants in the lower social strata of the society.

Based on the draft proposal submitted for the 12th five year plan to boost the production of native chicken, a proposal was submitted to the state planning commission, aimed at improving the population of native chicken in the state of Tamil Nadu, by starting the chick mother farm at the Tamil Nadu Poultry Development Corporation Limited infrastructure located at Kapalur, Madurai. Later another proposal was given under the Poultry Development Scheme for the propagation of native chicken in all districts of Tamil Nadu. It has been launched in 17 districts during May 2012 and is being continued with the state government grant of Rs.25 core per annum. Farmers are benefited with front and back subsidiary of NABARD. The scheme for development of Poultry Clusters in the non-poultry area in Tamil Nadu and an All India Co-ordinated Project (AICRP) on rural poultry are testimony to this development.

Consequent to launch of the scheme there was a great demand for the pure varieties of native chicken. As the scheme is the brain child of Poultry Research Station, TANUVAS, Chennai, it has become mandatory to address the crisis by evolving a breeding programme for developing a superior variety of native chicken. Accordingly, strains of Aseel from Central Poultry Development Organisation (CPDO), Bhuvaneshwar (Base population), Directorate of Poultry Research (DPR),

Hyderabad and from a private entrepreneur and champion breeders and needy farmers were brought into the genetic pool.

Breeding programme adopted to develop the strain

Initially random breeding was carried out in the existing flock with the superior males outsourced from private entrepreneur and champion breeders, so as to improve the morphometric characters with sticking features of Aseel. Later on individual selection was carried out in the male for higher body weight and family selection in female for more egg number (part time egg production). Accordingly a dual purpose native variety of Aseel with all the characteristic features of the breed was evolved for table purpose with continuous selection and breeding for six generations to achieve 12th week body weight of 1.0 kg, with FCR at 3.5 and livability of 95 per cent.

Special feature of the strain



The face is long and slender. The eyes are compact, well set and present bold looks. Wattles and ear lobes are bright red and the beak is hard. The neck is long, uniformly thick but not fleshy. The general feathering is close. Predominantly reddish brown plumage. Predominantly pea comb, occasionally rose comb seen. Elongated body length measuring 58.5 cm from head to tail and 60.25 cm head to toe. The tail is small and drooping. The legs are strong, straight and set well apart. Dark brown shelled eggs with thick shell measuring 0.33 mm. Reduced broodiness with resultant more egg number (160) and more chicks (112) per dam. The production performance and carcass characteristics of TANUVAS Aseel chicken are presented in Tables 1 & 2.

Table 1

Production performance of TANUVAS Aseel Chicken

1	Hatch weight (g)	:	33.92
2	8 th week body weight (kg)		
	Male	:	0.48
	Female	:	0.41

3	12 th week body weight (kg)		
	Male	:	1.18
	Female	:	0.91
4	Feed conversion ratio	:	3.5
5	Body measurements (cm)		
	Neck length	:	22.51
	Thigh length	:	10.42
	Drumstick	:	15.61
	Shank length	:	10.42
6	Livability % (0-12 weeks)	:	94.7
7	Age at sexual maturity (days)	:	141
8	Egg production % (20-40 weeks)		
	HDEP	:	44.85
	HHEP	:	41.98
9	Egg weight (g)	:	52.14
10	Hatchability (%)		
	Total hatchability	:	70.75
	Fertile hatchability	:	85.17

Table 2
Carcass yield of TANUVAS Aseel Chicken

Characteristics during 12 th week	Per cent
Average dressing yield	76.00
CUT-UP PARTS	
Breast weight	22.0
Back weight	20.0
Thigh weight	16.0
Drumstick weight	16.5
Wing weight	13.5
Neck weight	7.0
Giblets weight	5.0



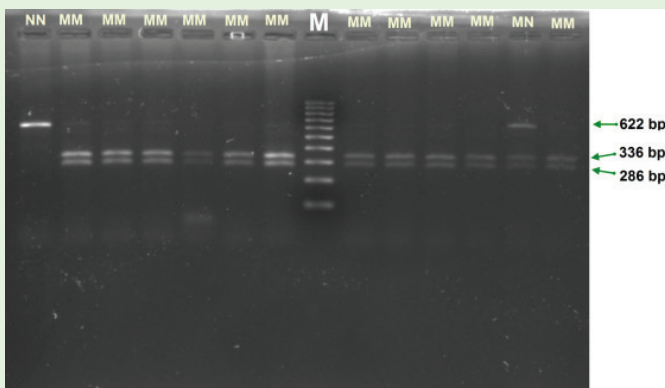
This variety was released during the foundation day of the University held on 10.11.2017. So far more than 1,50,000 germplasm in the form of hatching eggs, chicks and birds were supplied to Government Department, farmers and small entrepreneurs.

Dr. A. V. Omprakash, Dr. C. Pandian and Dr. S. Ezhil Valavan
Poultry Research Station, TANUVAS, Chennai – 600 051
Email : prs@tanuvas.org.in

RESEARCH HIGHLIGHTS (2015-16)

Polymorphism of *IGF-I*, *BMP* and *CAST* Genes and their Association with Growth traits In Madras Red and Mecheri Sheep

- At *IGF1*/SSCP locus, the analysis revealed a significant higher weight gain of AA genotype at 12 months than in AG and GG genotypes.
- The weight gain at one and 12 months of *CAST* / *MspI* MN genotype was significantly higher than MM genotypes.
- At *CAST* / *NcoI* locus, the MN genotype yielded significant weight gain at 12 months age weight gain than MM.
- In *CAST* / *TaqI* locus, the birth weight and three months age weight gain of AB and BB genotypes were significantly higher than their AA counterpart.



RFLP pattern of *CAST* / *MspI* gene in Madras Red Sheep

Research Scholar: R. Chitra

Department of Animal Genetics and Breeding, VCRI,
Namakkal.

Chairman: Dr. S. Panneerselvam

Optimization of protein, energy, lysine and methionine requirement for broilers in environmentally controlled housing system

- In environmentally controlled housing system provision of 100 Kcal/kg ME higher energy with 1% less protein and 0.1% less lysine requirement than the standard recommended nutrient level with same methionine requirement may give better profit.
- Feeding different levels of lysine and methionine showed higher score for all the meat sensory

parameters like appearance, flavour, tenderness, juiciness, mouth coating and overall acceptability compared to open sided housing system.

Research Scholar: K. Rajendran

Department of Poultry Science, VCRI, Namakkal.

Chairman: Dr. K. Mani

Effect of edible antimicrobial film coating on shelf life of chicken nuggets

- Chicken nuggets wrapped in edible carrageenan with Indian gooseberry extract films and edible carrageenan with garlic oil extract films had a shelf life of 28 days in comparison with 21 days in case of chicken nuggets wrapped in plain edible carrageenan films, coated with carrageenan with Indian gooseberry coating and coated with carrageenan with garlic oil coating, and 14 days in uncoated chicken nuggets wrapped in low density polyethylene.
- Sensory analysis revealed that chicken nuggets wrapped in edible carrageenan with Indian gooseberry extract films was superior than chicken nuggets wrapped in edible carrageenan with garlic oil extract films.

Research Scholar: V. Vivek

Department of Livestock Products Technology
(Meat Science), MVC, Chennai.

Chairman: Dr. Robinson J J Abraham

To evolve cost effective general anaesthetic protocol for various surgeries in cattle

- A total of 23 surgical interventions in cattle and seven anaesthetic trials in buffaloes were carried.
- Dexmedetomidine at the dose rate of 1 µg/kg i.v. and double drip (glyceryl guaiacolate and ketamine 50 and 2 mg per ml) was used to induce anaesthesia and maintained with isoflurane anaesthesia.
- The dexmedetomidine resulted in significant isoflurane sparing effect and double drip provided smooth and safe induction in all animals.
- The low flow inhalation anaesthesia being safe, valuable and cost effective could be used routinely in clinical cases requiring general anaesthesia for surgical interventions.

Principal Investigator: Dr.S.Dharmaceelan

Department of Veterinary Surgery and radiology,
VCRI, Tirunelveli.

Printed and Published by

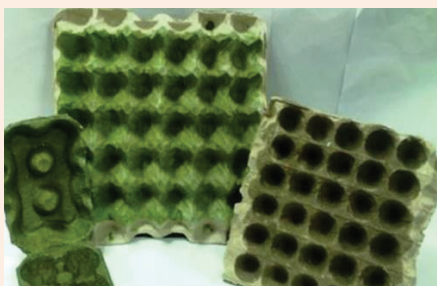
Dr. N.K. Sudeep Kumar, Ph.D., Director of Distance Education i/c.,
on behalf of Tamil Nadu Veterinary and Animal Sciences University
and Printed at University Publication Division,
Madhavaram Milk Colony, Mathur Road, Ambathur Taluk,
Tiruvallur District, Chennai - 600 051.

Editor : Dr. N.K. Sudeep Kumar, M.V.Sc., Ph.D.,

Phone : 044-2432 0411 E-mail : dde@tanuvvas.org.in

PRODUCTS DEVELOPED AT TRPVV - TANUVAS AND AVAILABLE FOR SALE

Nanoguard



Utility : A nano concoction coated egg trays that increases the shelf life of eggs stored which are especially meant for village chicken eggs.

Cost (Exclusive of GST) : Rs. 5/- per tray
Rs. 100/- for 500 ml of Nanoguard solution.

BruAlert



Utility : A cELISA based kit for detection of antibodies to Brucella (developed using outsourced monoclonal antibodies from M/s. Ingenasa, Spain).

Cost (Exclusive of GST) : Rs. 4000/- per kit for testing 45 samples in duplicate.

A1A2 Detect



Utility : Cow's milk protein constitutes around 30% of β -casein. It has been classified into two genetic types as A1 and A2. The A1 variant of β -casein upon digestion leads to the formation of beta casamorphin. The A2 variant has been shown to have a positive association with milk yield and protein content.

Cost (Exclusive of GST) : Rs. 2275/- per kit for testing 10 samples.

Nano IVMEC dog shampoo



Utility : This novel nanotechnology based shampoo is formulated especially for companion animals. Active ivermectin compound and phytochemicals are encapsulated in nanoform to increase their stability and reduce dosage to minimize toxicity with extended activity. It has both anti-parasitic and anti-microbial activities.

Cost (Exclusive of GST): Rs. 180/- for 150 ml.

For further details:

Project Director, Translational Research Platform for
Veterinary Biologicals,
2nd Floor, Central University Laboratory Building, TANUVAS,
Madhavaram Milk Colony, Chennai - 600051.
Phone: 91-44-25556275, 25556276, 25556277

Rights and Permissions: 1. The views / opinions expressed by the authors are their own and the editorial board / publisher do not necessarily reflect the views given in the content. 2. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or inclusion in any information storage and retrieval system, without prior permission.