

Poultry Breeding for sustainable increase in production

Dr Victor E. Olori
Senior Geneticist, Aviagen Ltd.





The question



“How can animal breeding contribute to sustainable and global animal production”

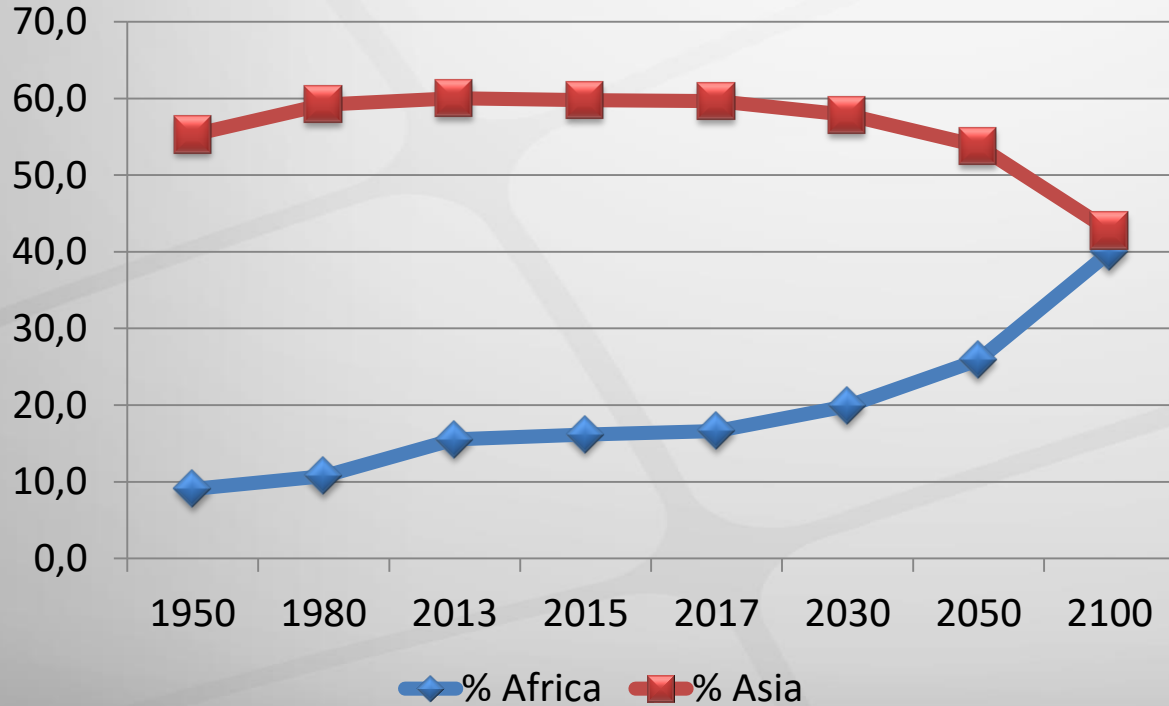
August 29, 2018 - 8:30-12:30

World Population; Growing

	Population (Billion)					
Year	Africa	Asia	Europe	North America	World	% Africa
1950	0.229	1.396	0.549	0.172	2.526	9.1
1980	0.478	2.634	0.695	0.255	4.449	10.7
2013	1.111	4.299	0.742	0.355	7.162	15.5
2015	1.186	4.393	0.738	0.358	7.349	16.1
2017	1.256	4.504	0.742	0.361	7.550	16.6
2030	1.700	4.947	0.739	0.395	8.551	19.9
2050	2.530	5.257	0.716	0.435	9.772	25.9
2100	4.470	4.780	0.653	0.499	11.184	40.0



% of world population in Africa and Asia

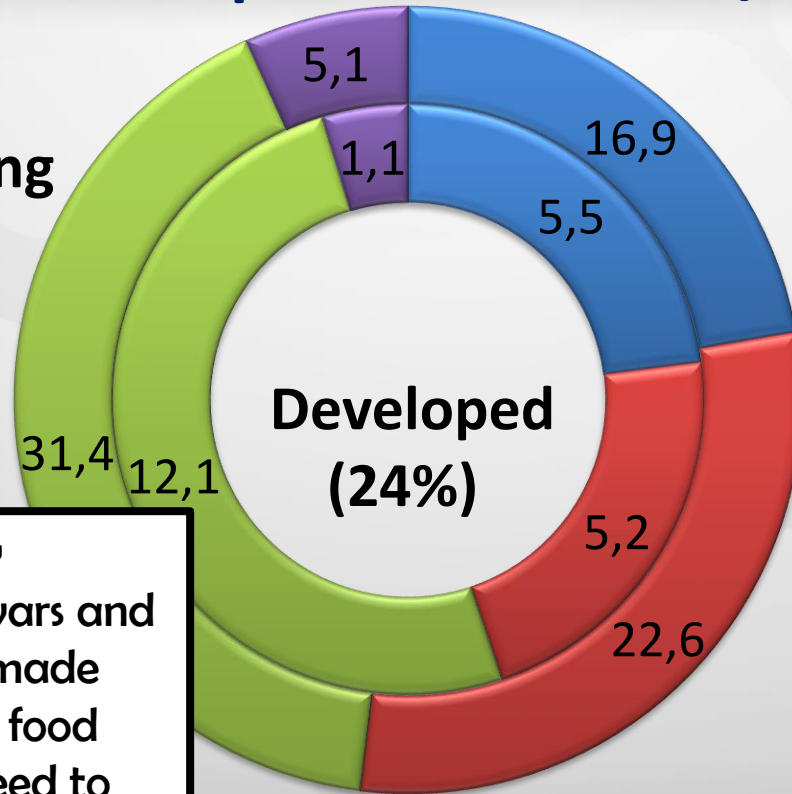


- 78% in 2030
- 80% in 2050
- 83% in 2100



% Increase in meat production 2015/17 to 2027

**Developing
(76%)**



- Beef
- Pork
- Poultry
- Sheep

**Developed
(24%)**

In regions significantly affected by conflict, wars and a host of other man-made and natural disasters, food production systems need to be resilient and sustainable (OECD-FAO, 2018)

**▲ 48.14M Tonnes
Poultry 44%
OECD/FAO 2018**

Poultry production needs to increase sustainably, more so in Africa and Asia

Sustainability



- **Use production resources efficiently without compromising future availability.**
- **Avoid non reversible impact on the environment to guarantee support for life as we know it in future generations.**

Sustainable increase: Key elements

Genetically superior stock;
Efficient, robust & resilient



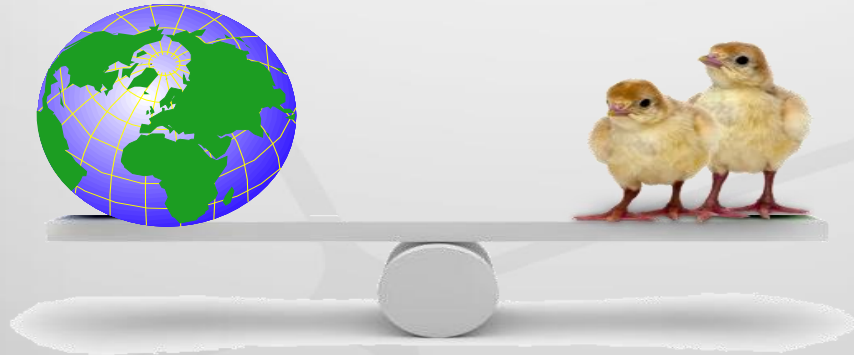
Efficient production
systems (entire value chain)



Knowledgeable and skilled
managers (Human capacity)

Breeding of genetically superior stock

Sustainable breeding: Via balanced breeding goals targeted at traits linked to sustainability and environmental protection.



Balance economic success with impact on environment, human health and animal welfare

Balanced Genetic Improvement

BREEDER

Chick output
Hatchability
Liveability
Fertility Egg
Quality

LIVE BROILER

Growth
FCR
Liveability
Uniformity

PROCESSING

Yield Components
Eviscerated
Breast, Leg
Uniformity
Meat Quality

RAPID GENETIC IMPROVEMENT PROGRAM

Metabolic Fitness

Welfare Traits

Liveability

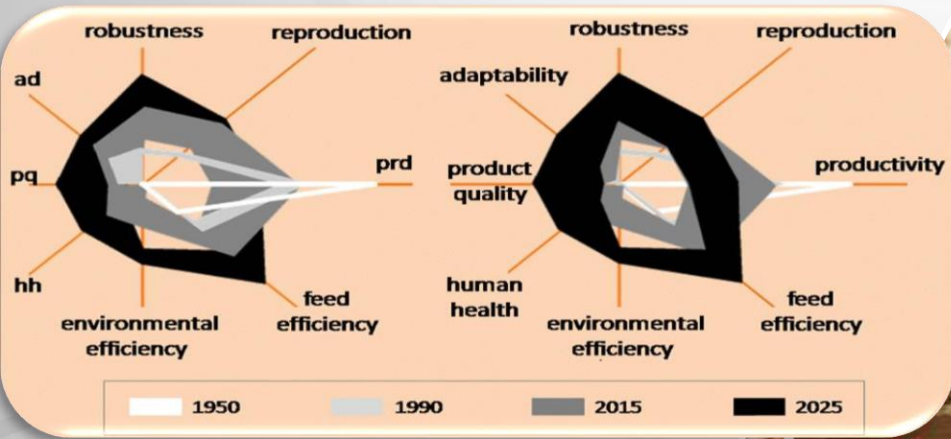
Skeletal Strength

Disease Resistance

Pathogen Freedom

SUPPORT

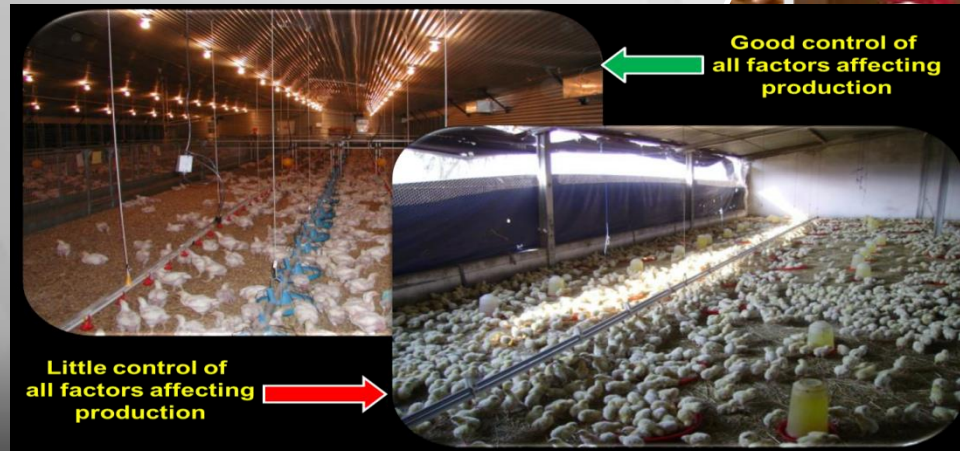
Key features



Wide genetic base

Broad breeding goal

Multi-environment selection



Supporting Efficient Production

Genetic Enhancement

- ▲ Production efficiency
 - Chick output, growth, meat yield
 - Feed efficiency, water utilisation
- ▲ Health & welfare

Sustainable Supply

- Seed stock distribution network
- Range of products
- ▼ Environmental impact
- Manage genetic resources

Sustainable Production

- Research & training support
- ▲ Knowledge and human capacity
- ▲ Efficient management of high genetic stock
- ▼ Environmental impact
- Robust performance
- Technical support

Extensive Distribution network



Minimise environmental footprint



Develop local human capacity

- Localised technical support

Creates local jobs

- Improve local (rural) economies
- Improve livelihood
- Minimises human impact on environments

Efficient Distribution network

Supporting Poultry sector's contribution to attaining the UN 2030 Sustainable Development Goals (SDGs)

Human capacity building

- Direct technical support
- Technical management information resources
- Train the trainers
- Develop new talents

Skilled farmers manage resources better, minimises waste & gets the best out of high genetic merit birds

Education Events

Aviagen Schools

- Aviagen provides a central venue, teachers and all materials required for a hands-on training.
- Students from various countries nominated by clients/farmers so we know they will practice what they learn.



EMEA SCHOOL: BREEDER MODULE

26/08/2018 - 01/09/2018

Ongoing now

Edinburgh, Scotland, UK



The breeder module focuses on identifying how to improve the cost efficient production of fertile hatching eggs in an interactive workshop format.



EMEA SCHOOL: BROILER MODULE

25/11/2018 - 01/12/2018

Edinburgh, Scotland, UK



The broiler module is a source of information and knowledge on how to improve the production of cost efficient broiler meat in an interactive workshop format.



U.S. PRODUCTION MANAGEMENT SCHOOL

03/06/2019 - 28/06/2019

Huntsville, AL



The Aviagen Production Management Course emphasizes many important aspects of poultry science and their practical application to managing successful breeder and broiler operations.



What the students say ...

“ Information was delivered in an original and progressive manner. The networking opportunity with other students made for interesting discussions and offered new perspectives to take back to my job.

“ It was a great week overall, with some hugely valuable exercise and insights. It was great to have the opportunity to interact.

“ The take-home messages were clear on many fronts and will empower me in my work.

To find out more ...

If you would like further information about the School, dates and venues please visit www.aviagen.com, contact your local **Aviagen representative** or school@aviagen.com.



Aviagen and the Aviagen logo are registered trademarks of Aviagen in the US and other countries. All other trademarks or brands are registered by their respective owners.
© 2016 Aviagen.



The Aviagen Europe, Middle East and Africa (EMEA) Production Management School

An Introduction ...



“Knowledge has no value unless you use and share it”



About...

Aviagen® have a long history of providing education to the poultry industry, with the original month-long Production Management School taking place in the US for over 50 years.

To meet the growing demand for more formal training opportunities in the poultry industry and in line with our *'global reach, local touch' philosophy, we established regional Schools and the Europe, Middle East & Africa (EMEA) Production Management School was founded in 2012.*

The **EMEA School** is unique in that it follows a modular format with three separate week-long courses on the key elements of our business – **breeder, broiler and hatchery & incubation management.**

All modules have one thing in common:

They focus on identifying how to improve the production of cost-efficient broiler meat.

The School is structured to encompass a mix of lectures, tutorials and workshops, all led by Aviagen and external experts who are leaders in their field of expertise. **The Breeder and Broiler Modules** are both run in the format of an interactive, highly participative case study of a hypothetical company which the students are in charge of.

Everything the students learn during one of the modules will be directly applicable in their day jobs.

Knowledge-sharing between attendees is another important aspect of the **School experience**: Students learn from each other, the Schools provide an excellent networking platform and many new contacts and friendships are forged, with links made during an **Aviagen School** continuing long after it finishes.



Fast Facts...

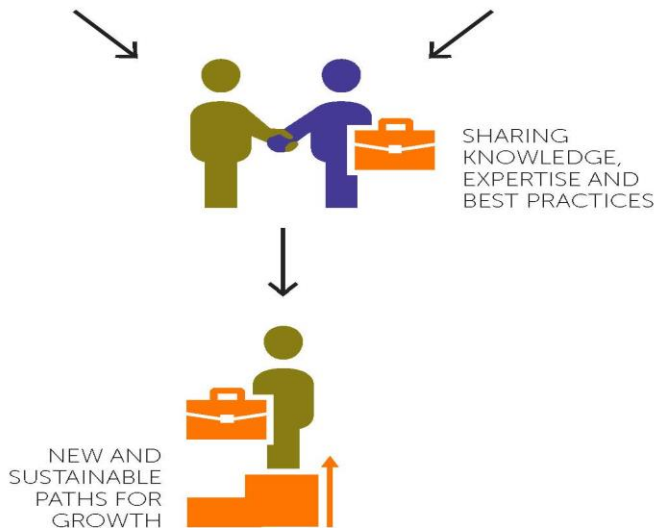




ENTREPRENEURS IN NEED OF BUSINESS ADVICE AND TECHNICAL ASSISTANCE IN DEVELOPING COUNTRIES AND EMERGING MARKETS



VOLUNTEERS WITH EXTENSIVE EXPERIENCE IN 70 SECTORS OF THE ECONOMY



New models

- Remote coaching
- Seminar and quick-scans
- Vocational training
- Supporting hands on arm of existing institutions and colleges
- Technical assistance accompanying investments
- Strengthening the value chain

Africa Poultry Vocational Training Initiative (APVTI)

• Why

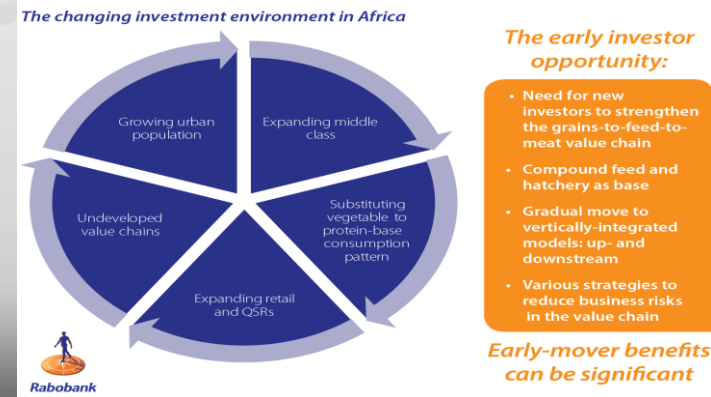
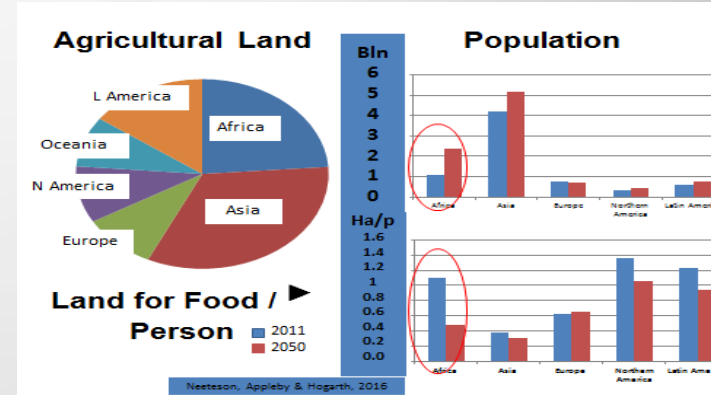
- Global Outlook ►
- Africa: half agricultural land/person in 2050
- Required: Poultry production both commercially as well as household, read e.g. <https://research.rabobank.com/far/en/sectors/animal-protein/Time-for-Africa-Report.html>

• Bottle necks

- Vocational practical poultry training
- Suitable to get access to funding

• Benefits APVTI

- ↓ youth unemployment, ↓ rural-urban migration, ↓ rural poverty, ↑ skilled staff



Technical management information resource

Welcome to the Aviagen Information Library

This library contains material developed by Aviagen to help our customers profitably manage their operations to produce high-performance chickens through sound flock management programs.

To search the Information Library, use the search module. To narrow your search results, use the keyword search and drop-down menus on the module.

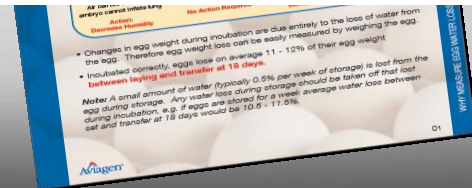
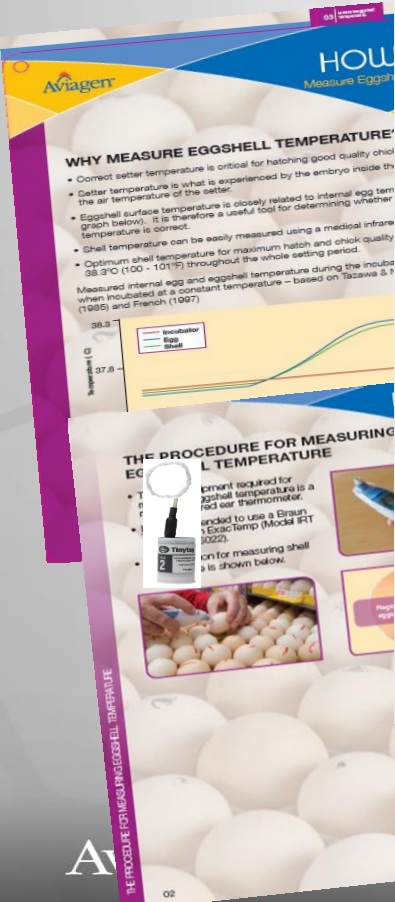
All documents are available in English; however, not all documents are available in all languages.

INTRODUCTION

The How To's are designed to be simple, back to basics documents describing critical management areas, their importance and how to achieve them. The Vet How To's provide step by step guidance on key veterinary management practices and techniques that will aid and promote overall flock health and welfare.

HOW TO...

1. Take Bacteriological Culture Samples
2. Take FTA Card Samples
3. Take Tissue Samples for Histopathology



HOW TO...

Ventilation

INTRODUCTION

The How To's are designed to be simple, describing critical management areas, their importance and how to achieve them. This set of ventilation How To's describes basic key management procedures, to ensure the house environment is maintained at optimum levels. Achieving good ventilation management will aid in maintaining the bird's health and subsequent breeder and broiler performance.

HOW TO...

1. Calibrate an In-House Flowmeter
2. Measure House Air Tightness
3. Measure Fan Capacity
4. Check Air Inlets are Open
5. Measure Average Air Speed

HOW TO...

Broiler Management

INTRODUCTION

The How To's are designed to be simple, back to basics documents describing critical management areas, their importance and how to achieve them. The Broiler Management How To's describe basic key management practices for broilers. Getting basic key management practices correct will help maximize flock welfare and productivity throughout the life of the flock.

HOW TO...

1. Set Up a Spot Brooding Circle
2. Set Up Whole-House Brooding
3. Monitor Temperature and Relative Humidity
4. Assess Crop Fill
5. Bulk Weigh Broilers Between 0-2 Weeks
6. Individually Weigh Broilers From 2-6 Weeks
7. Take a Representative Feed Sample
8. Measure Nipple Drinker Flow Rate

HOW TO...

Broiler Breeder Management

INTRODUCTION

The How To's are designed to be simple, back to basics documents describing critical management areas, their importance and how to achieve them. The Management How To's describe basic key management practices for breeders. Achieving best practice in key management strategies at key ages will help maximise flock productivity.

HOW TO...

1. Assess Crop Fill
2. Measure Pin Bone Spacing
3. Weigh Eggs
4. Bulk Weigh Broiler Breeders in Rear
5. Individually Weigh Broiler Breeders in Rear
6. Individually Weigh Broiler Breeder Females in Production
7. Measure Chain Feeder Speed
8. Measure Nipple Drinker Flow Rate
9. Set Up a Spot Brooding Circle for Parent Stock
10. Maintain Broiler Breeders Within Their Thermal Comfort Zone Post-Brooding



AVIAGEN BRIEF

July 2016

Broiler Management in Hot Weather

Xavier Asensio, Aviagen Technical Service Manager in Western Europe

SUMMARY

Broiler producers aim to attain the best performance from their flocks. In order to achieve this target, they must provide the environment and conditions that will allow the birds to express their genetic potential in a wide range of environments. This involves paying close attention to bird welfare, chick quality, nutrition, management, and environment.

Achieving genetic potential during periods of excessive or prolonged high environmental temperatures creates a particular set of challenges for the broiler producer. The key is to have facilities in which the environment can be controlled and to use specific management strategies that will help to minimize the impact of high temperatures on bird performance.

This document looks at providing advice on how to best manage flocks during periods of high environmental temperatures.

For more information on the management of Aviagen® stock, please contact your local Aviagen representative.

We are good at investing in People

Research, Development, Trainers, Producers



Conclusion

Poultry production needs to increase sustainably to meet the rapidly increasing demands in Africa and Asia

Genetic improvement is key to sustainable improvement in livestock production.



This must be complemented by good knowledge and skills in managing animals of high genetic merit. So that producers and the environment can benefit from genetic improvement



Discussion points

- Poultry production needs to increase (No doubt)
- Increase has to be sustainable (Critical)
- Most increase in Africa and developing regions of the world (Obvious)
 - Poor infrastructure
 - Low technology uptake
 - Poor management skill
- Balanced genetic improvement is key to sustainable increase (on it)
- Management of high genetic merit animals is also important
- Human capacity development (Knowledge and skill) essential
- **So what can we do?**
 - Ensure efficient production in less resourced regions of the world
 - Skill development in managing animals of high genetic merit
 - Support infrastructure development
 - Support technology uptake

Thank You

