Poultry Breeding and Genetics Training Course

Professional Development Training Course Outline

Category	Veterinary and Animal Science	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Poultry breeding and genetics is a cornerstone of modern poultry production, driving efficiency, productivity, and sustainability. Poultry Breeding and Genetics Training Course equips participants with cutting-edge knowledge in genetic selection, hybrid development, bioinformatics in poultry, and performance optimization. Participants will learn how to harness genomic tools, quantitative genetics, and advanced breeding techniques to produce high-yield, disease-resistant, and nutritionally optimized poultry. The course emphasizes practical applications, case studies, and innovative solutions for broilers, layers, and indigenous poultry breeds.

With the growing global demand for poultry products, the need for precision breeding, genetic improvement, and sustainable poultry management has never been higher. This course combines theory, hands-on training, and real-world case studies to empower professionals, researchers, and entrepreneurs in making data-driven breeding decisions, enhancing productivity, and ensuring profitability. Attendees will also gain insights into heritability studies, crossbreeding strategies, and emerging trends in poultry genomics, positioning them at the forefront of the poultry industry.

Programme Curriculum

Poultry Breeding and Genetics Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand principles of poultry genetics and inheritance.
2. Learn advanced breeding techniques for broilers and layers.
3. Explore genomic selection and marker-assisted breeding.
4. Implement crossbreeding strategies for hybrid vigor.
5. Evaluate performance traits using quantitative genetics.
6. Apply bioinformatics tools in poultry breeding programs.
7. Develop disease-resistant poultry lines.
8. Integrate nutritional genomics for growth optimization.
9. Enhance reproductive efficiency through selection.
10. Analyze heritability and genetic correlations in traits.
11. Design sustainable breeding programs for smallholders and commercial farms.
12. Explore emerging trends in poultry genomics and biotechnology.
13. Utilize data-driven decision-making in poultry breeding and genetics.

Target Audience

1. Poultry farmers and commercial breeders
2. Animal science researchers
3. Veterinary professionals
4. Agriculture extension officers
5. Poultry farm managers
6. Students in animal genetics or poultry science
7. Entrepreneurs in poultry startups
8. Biotechnology professionals in animal breeding

Course Modules

Module 1: Fundamentals of Poultry Genetics

- Overview of poultry genome and inheritance patterns
- Types of genetic traits and trait expression
- Heritability and genetic correlations in poultry
- Importance of pedigree analysis
- Case Study: Genetic selection in high-yield layer strains

Module 2: Breeding Techniques in Poultry

- **Pu**re line breeding and maintenance
- Crossbreeding programs for hybrid vigor
- Selection indices and performance evaluation
- Inbreeding management for sustainable production
- Case Study: Broiler performance improvement through selective breeding

Module 3: Genomics and Molecular Breeding

- Introduction to genomic selection and DNA markers
- Marker-assisted selection (MAS) in disease resistance
- CRISPR and gene editing applications in poultry
- Genetic diversity analysis using bioinformatics
- Case Study: Genomic tools improving egg production in layers

Module 4: Performance and Trait Evaluation

- Growth rate and feed efficiency measurement
- Egg production and quality traits
- Reproductive performance evaluation
- Trait correlation and selection strategies
- Case Study: Optimizing broiler traits for market demand

Module 5: Disease Resistance and Genetics

- Genetic basis of disease resistance
- Breeding for avian influenza and coccidiosis resistance
- Immune response and genetic markers
- Management practices supporting genetic resistance
- Case Study: Developing Marek’s disease-resistant lines

Module 6: Nutrition and Genomics Integration

- Nutritional genomics and feed conversion efficiency
- Impact of diet on gene expression and growth
- Functional feeds and genetic potential
- Microbiome-genome interactions in poultry
- Case Study: Enhanced growth using nutrigenomic approaches

Module 7: Sustainable Breeding Programs

- Eco-friendly breeding strategies
- Integration of smallholder and commercial poultry genetics
- Cost-benefit analysis of breeding programs
- Record-keeping and data management
- Case Study: Community-based breeding for indigenous poultry

Module 8: Emerging Trends and Future of Poultry Genetics

- AI and machine learning in breeding decisions
- Genome editing and next-gen sequencing applications
- Automation in phenotype data collection
- Ethical and regulatory considerations

- Case Study: Smart poultry breeding farms using genomic technologies

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com