

Dual-Purpose Chicken for Small-Scale Producers

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Summary

Most indigenous chickens have low levels of egg and meat productivity and high mortality rate. Breeders have developed “dual-purpose” chicken that produce both egg production and meat, and are low cost, disease resistant, heat tolerant, and feed efficient. The distribution of these improved breeds to farmers takes place by companies that establish a parent stock and hatchery operation. Day old chicks (DOCs) from the parent stock farm are then transported to brooder units who specialize in the brooding, feeding, and proper vaccination process for the first 30-40 days of the chicks’ life. This model makes it possible to deliver improved dual-purpose breeds to large numbers of farmers and gives chickens a high chance of survival due to their good start. One of the best examples of this approach is the African Poultry Multiplication Initiative (APMI) which started 1,590 brooder units in Tanzania and Nigeria, delivering 10.7 million DOCs to 525,000 smallholder farmers.

Technical Description

Dual-purpose chickens are more appealing than indigenous breeds because of their excellent performance in small free-range flocks, mixture within different age groups, ability to scavenge, efficient use of nutritional supplements, and better performance in both meat and egg production compared to indigenous breeds. The improvement strategy used in producing dual-purpose chickens is the same as purebred broiler and layer breeds. Distribution starts with a private company that acquires a parent stock and supplies brooder units with DOCs alongside feed and proper vaccination. After rearing the chickens for about four weeks, they will be sold to smallholder farmers who rear them under extensive production system for up to three months for sale as broilers. Another model involves raising chicks under semi-intensive systems for 6-12 weeks for meat. Alternatively, these chicks may also be reared for five months and sold as pullets to other farmers who rear them for egg production over the next 10 to 15 months before selling the “finished” layers for meat.

Uses

Distribution chains for dual-purpose chicken can be set up in any African country but may need adjustments per country. Dual-purpose chickens are often better suited to less intensive management.

Composition

These dual-purpose breeds are known for many desirable features of indigenous chickens, such as colorful plumage, resistance to diseases, adaptation to tropical conditions and the ability to scavenge their own food. The main improved dual-purpose breeds are Kuroiler and Sasso, which are available in Uganda, Tanzania, Zambia, Ethiopia, Mozambique, Burkina Faso, and Zimbabwe. Some indigenous chicken breeds such as the Fulani Ecotype are also considered as dual-purpose.

Means of application

Brooding unit operators receive technical support in the production of healthy, vaccinated chickens and gender empowerment from Village Poultry Agents. DOCs receive additional heat, light, feed, and medication for up to 21 days before the young birds are allowed scavenge outdoors. This prevents predators and supports early, specialized nutritional and physiological needs. These units are built to specification according to the desired production capacity. Necessary inputs are formulated feeds such as chicks-, grower-, and layers-mash, adequate clean water, vaccination, provision of vitamins. The poultry house must be cleaned, disinfected between production cycles to avoid pests and diseases.

Agroecologies	All Agroecologies.
Regions	Africa South of Sahara.
Developed in Countries	Zimbabwe, Zambia, Uganda, Tanzania, South Sudan, Somalia, Sierra Leone, Senegal, Rwanda, Nigeria, Niger, Mozambique, Malawi, Madagascar, Kenya, Ivory Coast, Guinea, Ghana, Gabon, Ethiopia, Democratic Republic of the Congo, Central African Republic, Burundi, Botswana, Benin.
Available in	Zimbabwe, Zambia, Uganda, Tanzania, South Sudan, Somalia, Sierra Leone, Senegal, Rwanda, Nigeria, Niger, Mozambique, Malawi, Madagascar, Kenya, Ivory Coast, Guinea, Ghana, Gabon, Ethiopia, Democratic Republic of the Congo, Central African Republic, Burundi, Botswana, Benin.
Solution Forms	Genetics.
Solution Applications	Livestock Production.
Agricultural Commodities	Poultry.

Target Beneficiaries	Women, Commercial farmers, Small-scale farmers.
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Commercialization

Commercialization Category

Commercially available

Startup Requirements

To start a dual-purpose chicken enterprise, one should build a simple chicken house, buy the necessary rearing equipment, and have sufficient resources for buying feeds and vaccinating.

Production Costs

A 100 to 150 m² room is suitable for rearing 1000 to 2,000 chicks for 4-5 weeks, including spaces for a brooder unit, growers house, and equipment/utility store. It costs about US \$930 to purchase and rear 1000 birds for five weeks.

Customer Segmentation

Viable commercial production of dual-purpose chickens is ongoing across multiple African countries. In most cases, dual-purpose chicken breeds are produced by the same companies that supply broilers and layers.

Potential Profitability

The profitability of a standard brooding unit in Nigeria is 30% per batch, depending upon reliance and cost of purchased feed. Under smallholder conditions, these chickens can reach a weight of 1.5 kg to 2.0 kg in 3 months and produce about 120 to 180 eggs annually. This contrasts with indigenous chickens that weigh 1.2 kg to 1.7 kg after six months and lay only 75 eggs per year. Improved dual-purpose breeds also have lower mortality and better growth rate. Studies by SAPPSA in Nigeria, Tanzania, and Ethiopia, have shown that smallholder farmers can substantially improve their livelihood by rearing dual-purpose breed.

Licensing Requirements

The ownership of the dual-purpose chicken breeds belongs to the commercial poultry hatcheries that market them, although once purchased these birds can reproduce on their own.

Innovation as Public Good

The solution is a regional good created by the African Chicken Genetics Gains program,

Solution Images



A young farmer rearing improved dual-purpose chickens



Distribution model for the dual-purpose chicken breed

Institutions



Accompanying Solutions

[Artificial Hatching in Semi-Automatic Incubators](#)