

Improving village chicken protection to elevate the livelihoods of poor people in Ethiopia: Project progress report

Joint research project of International Livestock Research Institute (ILRI), Ethiopian Institute of Agriculture Research (EIAR) and Wageningen University (WU) funded by Koepon Foundation

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Objectives of project

1. Run the breeding program for selective breeding of Horro chickens on station
2. Set up a cross breeding program using selected parents of Horro chickens with improved exotic breed.
3. Testing and dissemination of genetic materials developed on-station to people in the surrounding villages and evaluate performance.
4. Asses, document and improve poultry and poultry product marketing in the study sites



Breeding program to improve local chicken breed (Horro)

Trait	Base	Generation 5
Survival (26 wks)	<50%	97%
Age at first egg (d)	223	150
Body weight 16 wk (g)	550	788
Egg production upto 45 wks	24	65

Selection experiment Horro Chicken

- Currently in generation 6
 - Started egg laying
 - Population size: 350 hens and 100 cocks
 - Mortality of generation 6 birds < 3%
- Selection traits:
 - Survival
 - Body weight at 16 weeks of age
 - Cumulative egg production at 45 wks
 - Age at first egg

Cross breeding+ evaluation on station

- Production hens for field & station experiment (Jan 2013)
 - Improved Horro
 - Crossbred: Horro (f) x RIR (m):
 - RIR males have been imported in August 2012 (153 one-day olds, 150 survived)
 - Commercial hybrid of RIR type
 - Imported as egg (n=2000)
 - Unimproved Horro
 - Collect eggs in households

Experiments to compare 4 breed types

Field experiment (starting March 2013)

- Two regions
- 16 households in each region
- Each household receives 20 two-month old chicks
- Performance recorded in households during 6 months

Station experiment (starting January 2013)

- 120 hens of each breed type (3 replicates)
- Record range of traits including feed intake, egg at first egg, egg production, survival

PhD project (March 2011-February 2015)

- Project proposal approved by graduate school WIAS
- First paper on “Exotic chicken breeds in Ethiopia: their adoption by rural poultry keepers” submitted to Livestock Science
- Analysis of selection experiment (up to generation 6) including estimation of genetic parameters and trends: to be completed by September 2013.
- Analysis of field and station experiment: data collection in 2013 followed by analysis
- Analysis of Natural antibodies in different breed types in station experiment.
- Scenario study on breed improvement

Publicity

- Paper submitted to Livestock Science
- Oral presentation by Wondmeneh at European Association for Animal Sciences (Bratislava, 2012): “Adoption of exotic chickens in rural areas of Ethiopia: implication for breed introduction”
- Oral presentation by Wondmeneh at Ethiopian Society of Animal production (Addis Ababa, 2012): “Preliminary results of phenotypic/mass selection for egg production traits on Horro chicken ecotype in Ethiopia”
- ILRI research report “Village chicken production in central and western highlands of Ethiopia: characteristics and options for improving productivity and marketing” (final draft)

