



(left) Black soldier fly. Photo Katja Schulz (right) Black soldier fly larvae. Source BiolInnovate-Africa



## Black Soldier Fly larvae (BSF) as a substitute of protein /amino acid component in poultry diets

### The challenge

- Poor quality and high cost of poultry feeds for improved chicken keepers is an inhibitor of productivity.
- The feed-food competition with humans demands alternative ingredients.
- What changes do you want to achieve? Farmers have access to best-cost feed packages
- **Site:** Ethiopia, Kenya, Tanzania
- **Who will it benefit:** Smallholder farmers & young entrepreneurs

### Our innovative approach

- We established a **black soldier fly unit** on campus, regarded the larvae, determined the nutrition composition to essential amino acid level, formulated various rations to test the quality through feeding trails
- The unique aspect of the project is **developing specific rations for specific chicken strains** and optimize their requirements to reduce inclusion level of synthetic amino acids
- Develop a business model for mass production and delivery



Black Soldier Fly (BSF) larvae: Rearing (left) and processed (right). Photos ILRI/Ashenafi M.

- Poultry performance is constrained by the poor quality and high costs of commercial poultry feed
- The value of insect in poultry diets is established; but the extent of replacing conventional ingredients and the safety for humans needs to be investigated
- Currently business models for the efficient use of BSF larvae in poultry diets are unavailable

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### Potential Outcomes

- Various best cost poultry rations developed
- Growth and egg production performance of different chickens determined
- Microbial safety of poultry products of BSF fed chickens determined
- Business model developed
- Awareness of using BSF larvae in poultry diets created

### Next steps

- **Develop feed rations and test** using on-farm and on-station conditions and optimize
- **Develop, test and deploy a business model** for mass production and delivery
- **Scale up the innovation** in various project countries
- Level of price decrease and quality improvement using BSF larvae

### Partners

*Tanzanian Livestock Research Institute (TALIRI),  
Kenyan Agricultural and Livestock Research  
Institute (KALRO), Ethiopia Institute of  
Agricultural Research (EIAR)*

