NATIVE CHICKEN DIVERSITY IN BHUTAN

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BACKGROUND

- Native chicken rearing is a common feature in rural Bhutan
- Reared for eggs, meat, and manure and for religious offerings
- The roosters are kept for reproduction and for crowing
- Chicken is source of cash and high quality protein in their family diet
- About 66 percent of the farm households in the country own chicken
- A household rear four birds on an average
- Approximately 95 % of birds reared are native chicken types
- Remaining 5% are improved breeds
- These birds are generally reared on a scavenging system

NATIVE CHICKEN DIVERSITY

- Six or more different groups or lines of native chicken are reported to exist in Bhutan
- They are distinguished mainly by phenotypic characteristics and plumage pattern
- Some of them are:

Naked neck

- They have no follicles on neck and fewer or no feather on head

Hairy comb

They have patch of features behind the comb

NATIVE CHICKEN DIVERSITY – CONTD…

- **Barred chicken**
  - **different pattern of barred plumage, mainly black and white,**
- **Frizzled chicken**
  - **they have spike shape feather**

- **Yubja kaap**
  - **White village chicken**
- ***Yubja naap***
  - **Black village chicken**

PHYLO GENETIC ANALYSIS OF NATIVE CHICKEN

- The phylogenetic analysis suggests that all the native chickens in Bhutan (as usual)are originated from Red jungle fowl (*Gallus gallus*) (Nidup, 2003).
- Hence gene flow from Red jungle fowl to native chicken is still continued in Bhutan especially in rural areas

GENETIC DIVERSITY OF NATIVE CHICKEN

- **Bhutanese native chicken is examined for gene constitution**
- **The value of proportion of polymorphic loci and average haterogygosity is estimated from blood groups**
- **Gene differentiation, *GST* values estimated from both traits are low; hence the degree of genetic differentiation of native chicken population is low.**
- **The gene constitution of native chicken is reported to be similar to Nepal native chicken and that of other Asian countries.**
- **The genetic distance between Bhutan and Nepal native chicken valued as 0.1977 (Yamomoto, *et al.* 2007).**

NATIVE CHICKEN CONSERVATION & UTILIZATION

- Collaborating with National Bio Diversity Centre since 2010 to conserve and utilize native chicken
- Procured native chicken strains *(Yubja naap, Hairy comb, Necked neck and Frizzle) and kept at research farm*
- The objective is to initiate within strain selection. Data recorded on egg production and weight gain to evaluate suitable strains for low input system
- Generate replacement stock to conserve native chicken strains especially Black- *Yubja naap*

NATIVE CHICKEN MAMANGEMENT

- **Free range with a night shelter, made out of locally available materials**
- **Slightly improvised semi-intensive system of chicken raising is emerging in Bhutan**
- **The birds are fed with whole grain or rice or maize bran**
- **Commercial layer and broiler production is a recent trend**
- **This system is picking up in areas where there are no religious sentiments against killing**

PRODUCTION PERFORMANCE

- In backyard chicken production system there is no systematic breeding. The male and females are grown together
- Length of egg laying period for local native chicken is 12-25 days.
- Egg production from local chicken is low and averages 57 eggs per year (85 eggs under improved housing and feeding) yet it adds to family nutrition
- In a year local hen will have two to four clutches of eggs.
- Usually 5-10 chicks are raised by a local hen per hatch.

WAY FORWARD

- Strengthen research to study the performance of different lines of native chicken
- Select suitable strain to suit the low-input, family chicken production at the rural areas
- Impart skills to utilize locally available feed resources
- Explore the feasibility of initiating selection within the strains
- Contribute to conserve native chicken especially black *(Yubja Naap)*