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## **Awareness of Poultry Farmers and Traders on Newcastle Disease in Kenya**

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### **Introduction**

The poultry sector in Kenya is classified into four sectors. Sector one is characterized by large scale commercial birds with high biosecurity levels. Sector two comprises of hatcheries that have high levels of biosecurity. Sector three comprises is dominated by small scale producers with minimal to low biosecurity levels. Sector four is the most dominant and comprises mostly of smallholder farmers who keep indigenous chicken under the free range with no biosecurity measures (Omiti and Okuthe, 2011). Free range systems of production pose difficulties in disease management because they expose the birds to disease causing pathogens. High incidence of diseases is the biggest challenge facing chicken production with Newcastle disease (ND) being the biggest constraint. It's the most prevalent and fatal chicken disease in Kenya (King'ori et al., 2010 and Atela et al., 2016). The challenges faced in the control of the disease include lack of knowledge on the disease and lack of basic training and control mechanisms regarding the disease.

Limited awareness results in flaws during management and marketing of chicken, increasing the frequency of outbreaks. There is limited information regarding the awareness and knowledge of farmers and traders regarding ND in Kenya. Awareness is a major step in control of the disease through implementation of disease prevention and control strategies. This study seeks to assess awareness of chicken farmers and traders towards ND in Kakamega county, Kenya.

### **Material and Methods**

The study was conducted in Kakamega county, Kenya. Indigenous poultry is also a prioritized value chain in the county. A Focus group discussion involving different stakeholders was chicken farmers, was conducted to get insights regarding the chicken value chain. A household and traders' survey were conducted in 7 sub counties of Kakamega county. Multistage sampling technique was used in this study. In the first stage, purposive sampling was use to select 6 sub counties and 7 live bird markets based on distribution of chicken. In the second stage, random

sampling was used to select different villages within the sub counties where farmers were randomly selected for interviews. Traders were also randomly selected in the live bird markets. A total of 312 respondents, comprising of 192 farmers rearing chicken and 119 chicken traders were interviewed. Qualitative method was used in data analysis with Descriptive statistics used to present the results in form of means, tables and graphs.

## Results and Discussion

### Socioeconomic characteristics of respondents

**Table 1: Socioeconomic characteristics of farmers and traders in Kakamega**

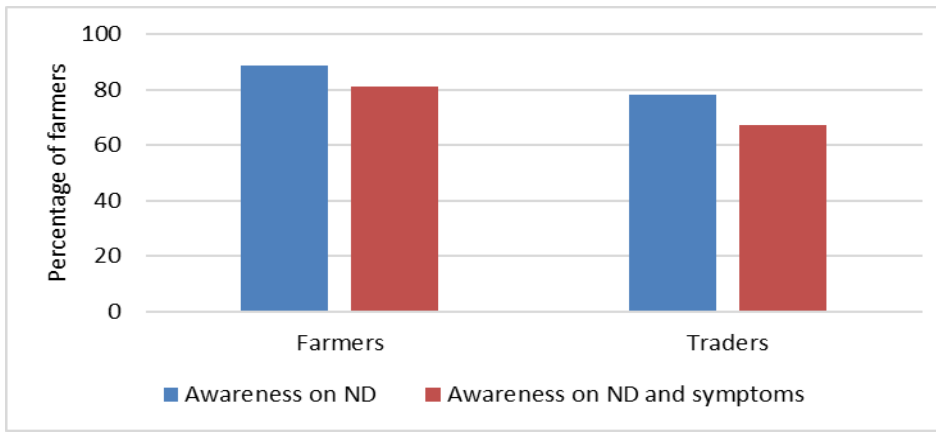
| Characteristics              | Farmers<br>N= 192 | Traders<br>N=119 |
|------------------------------|-------------------|------------------|
| Gender (% Female)            | 64.1              | 16.8             |
| Education level              |                   |                  |
| Primary school and below (%) | 44.8              | 55.2             |
| Above primary school (%)     | 68.6              | 31.4             |
| Access to training (% yes)   | 20.8              | 18.5             |
| Membership to groups (% yes) | 70.8              | 80.7             |
| Access to credit (% yes)     | 25.5              | 23.5             |

**Source:** Survey Data (2018)

Results from table 1 reveal the dominance of women (64.1 percent). in chicken production. This is consistent with several other studies (see Olwande et al., 2010 and Islam et al., 2014). In contrast, chicken trade is a male dominated activity with almost three quarters of the respondents (83.2 percent) being male. According to Ochieng et al. (2013), men dominate cash and revenues arising from poultry production. Most farmers have attained above primary school level of education while more than half of the traders had attained the equivalent of primary school. This reveals the attainment of basic literacy among the respondents. Majority of the farmers and traders revealed that they had not accessed any form of training regarding chicken production. Access to credit is still very low among both farmers (25.5 percent) and traders (23.5 percent) respondents receiving credit. Farmers lack the financial ability to invest in better chicken production and marketing activities.

### Awareness to Newcastle Disease

Awareness to the disease was relatively high among farmers than traders. Most respondents identified the disease using the local name “*muyekha*” as well as identifying the common symptoms and signs associated with the disease. The disease is endemic in Kenya (See Njue et al., 2001 and Njagi, 2010) and leads to high economic losses for the farmers and traders due to mortalities. Basic knowledge of the disease was basically high the most common chicken disease in Kenya.



**Figure 1: Awareness of farmers and traders on Newcastle disease**

**Source:** Survey Data (2018)

### Outbreaks of Newcastle Disease

**Table 2: Newcastle Disease outbreaks and symptoms**

| <b>Information</b>                          | <b>Farmers<br/>N=192</b> | <b>Traders<br/>N= 119</b> |
|---|--------------------------|---------------------------|
| Disease outbreak over 1 year period (% yes) | 46.90                    | 78.20                     |
| Common symptoms observed (% yes)            |                          |                           |
| Greenish diarrhea                           | 40.6                     | 53.8                      |
| Twisted necks                               | 22.4                     | 8.4                       |
| Increased respiration and gasping           | 29.2                     | 36.1                      |
| Loss of appetite                            | 23.4                     | 16.0                      |
| Sudden death                                | 23.9                     | 20.2                      |
| Drop in egg production                      | 11.4                     | 1.0                       |

**Source:** Survey Data (2018)

As revealed in table 2, less than half of the farmers (46.9 percent) had experienced outbreaks of Newcastle disease while more than three quarters of the traders (78.2 percent) had experienced Newcastle disease outbreaks. This demonstrates that ND outbreaks and deaths from the disease were mostly experienced in the live bird markets as compared to farms. This could be due to the nature of chicken trade and marketing. A study by Mulisa et al. (2014) in Ethiopia highlights that birds from different origins are mixed in the same cages and sold either to traders in other live poultry markets or consumers. The most prominent signs observed among sick chickens by chicken farmers and traders in the study was the discharge of Greenish Diarrhea followed by increased respiration and gasping (29.2% of the farmers) by the birds followed. These signs observed were consistent with signs of clinical cases of ND infection in chickens (Alexander, 2001). As revealed earlier, most farmers and traders could identify the disease based on the symptoms exhibited.

### Conclusions and Outlook

There is a high level of awareness of Newcastle disease and symptoms by farmers and traders in Kakamega county. Most outbreaks were experienced by traders in live bird markets compared to farmers rearing chicken. Extension services, veterinary services and trainings on chicken production should be provided to the farmers by different stakeholders. This will provide farmers with the technical knowledge on disease process and chicken management. There is need for awareness campaigns on chicken, adoption of disease preventing measures among farmers and traders as well as improved production and marketing practices. This will help reduce disease spread and frequent disease outbreaks that result in losses for farmers and traders.

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