

Vaccination Failures among Poultry Farmers in ABA Metropolitan City Abia State, Nigeria

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ABSTRACT---- *The study evaluated vaccine failure among poultry farmers in Aba metropolitan city. The procedure involved multi stage sampling technique on the sample size and the use of questionnaires was employed. All the respondents were farmers. The results obtained were presented in frequencies, percentages, and bar chart. The study showed that 51.8%, 37.2% and 11.00% represented ages of respondent of 26- 40 years, 41-55 years and 56-70 years respectively. The study also review that 85.4% were male while 14.6% were female respondents. Within the study area, it was revealed that 64.5%, 28.2% and 7.3% represented the educational status of the respondents in that order secondary, tertiary and primary. The results showed that 55.4%, 22.6% and 21.8% represented the occupation of the respondents involved, which are: trading and farming, civil service and farming and wholly farming in that sequence. The study showed that 61.8%, 83.6%, and 25.4% abide by manufacturers directive, vaccinate birds morning or evening and vaccinate sick birds. Respondents that starve birds of water before vaccination, source vaccine from veterinarian and consult veterinarian before vaccination presented 64.5%, 46.3% and 38.2% respectively. Similarly 42.5% experienced vaccine failure while the incidence of disease due to vaccine failure was 19.6%, 16.4% 11.2%, 8.4%, 3.60% and 6.5% for fowl typhoid, newcastle disease, infections bursal disease, fowl pox, egg drop syndrom and coccidiosis in that order. From the study, it is highly recommended that the sale of vaccine, handling of vaccine and administration of vaccine should be strictly carried out by veterinary personnel. There should be enlightenment of farmers on the importance of consulting veterinary personnel before any vaccination is administered in a poultry farm.*

Keywords---- vaccination, vaccine, farmers, poultry disease, veterinary personnel.

1. INTRODUCTION

The widespread distribution of diseases like Newcastle disease, Infections bursal disease, Coccidiosis, Fowl typhoid disease and epidemics of Avian influenza that have occurred over the last 15 years provide examples of the negative impact of diseases on the poultry producing sector and on society as a whole, [1,2,3] In Nigeria, diseases remain the greatest threat to the poultry industry and are responsible for huge economic losses to farmers [4]. Vaccine failure occurs when the vaccine administered does not confer immunity (protection) on the birds against a particular disease leading to high morbidity and mortality of birds and invariably increase cost of production [5].

A vaccine is a biological preparation that improves the immunity to a particular disease. It is obtained from microorganisms whose toxicity had been modified [6]. Globalization has led to trans-boundary poultry disease affecting previously unaffected areas. [7]. The occurrence of vaccine failure is due to poor administration of vaccine in poultry, negative effect from stress (extreme temperature, poor nutrition) in ability to produce enough immune response. Vaccination is the administration of the safe amount of antigens to stimulate antibody production against the host disease. It should be emphasized however, that under no circumstances must vaccination be regarded as an alternative to good management practices and biosecurity [8]. The vaccines cannot realistically be expected to provide 100% protection for birds vaccinated under field conditions. Vaccination confers protection against the clinical form of the disease at an individual level, whereas the reduction of both susceptibility and infectivity benefits the entire poultry population [9]. Adequately planned and managed rural poultry vaccination programmes can significantly reduce mortality and increase poultry production [10] Many factors may contribute to vaccination failures among which are: In areas with high density of poultry production, small flocks in close proximity to commercial flocks or where farms have biosecurity and management practices, more comprehensive and intensive vaccination programs may be necessary [11]. The adverse

effects of vaccine reactions on production performance are obvious. It is also clear to poultry producers that extensive use of vaccines to control disease in the absence of a sanitation program is not a sustainable approach [12].

Vaccination of poultry is and still remains a routine activity in farming practice in Aba metropolitan city, however, reports of disease outbreak due to vaccination failure still persist resulting in huge economic losses most especially among the private sector who are the major players in the industry. This study was conducted to evaluate factors responsible for vaccination failures in Aba city, Abia state, Nigeria.

2. MATERIALS AND METHODS

The study was conducted in Aba metropolitan city. The sample population was the commercial poultry farmers made up of small, medium and large scale farmers. The study covered five local government areas which make up the city namely; Aba North, Aba South, Obingwa, Osisioma and Ugwunagbo this location was chosen because of high concentration of poultry farms in these areas. A multi stage method of sampling technique was employed. Random selection of communities, wards and farmers from each local government areas who make use of poultry vaccines resulting in cumulative sample size of 110 respondents. This study was conducted making use of proper and well structured questionnaire to which farmers were the respondents. The data obtained were statistically analyzed and presented in percentages, frequencies and bar chart.

3. RESULTS

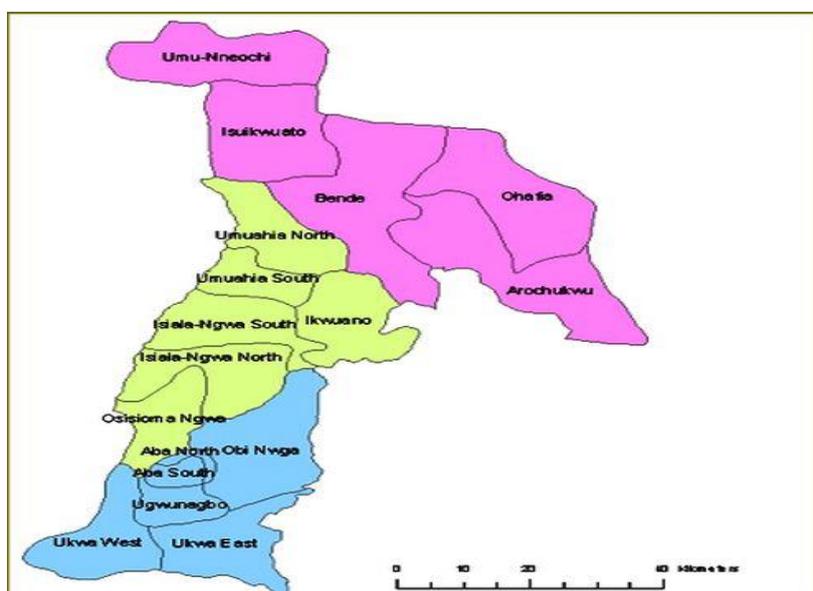


Fig 1: Map of Abia State shows area of study

TABLE 1: Biodata Of Respondents (N=110)

Variables	Frequency	Percentage (%)
Age		
25 – 40 years	57	51.8
41 – 51 years	41	37.2
56 – 70 years	12	11.0
Sex		
Male	96	85.5
Female	14	14.6
Educational Qualification		
No formal education	8	7.3
Secondary education	71	64.5
Tertiary education	31	28.2
Occupation		
Mainly farming	24	21.8
Trading + farming	61	55.4
Civil service + farming	25	22.6

Table 2: Frequency distribution and percentage of awareness of respondents to proper vaccine administration (N = 110)

Variable (%)	Frequency Distribution	Percentage Awareness (%)
Access to vaccination chart	59	53.6
Abide by manufacturer directive	68	61.8
Vaccinate birds in the morning or evening	92	83.6
Keeps to route of vaccination	90	81.8
Vaccinates sick birds	28	25.4
Records of vaccination	73	66.3
Starve birds of H ₂ O before vaccination	71	64.5
Vaccine sourced from veterinarians	51	46.3
Drinkers to birds ratio	87	78.2
Consult veterinarian before vaccination	42	38.2

Source: Field survey 2015

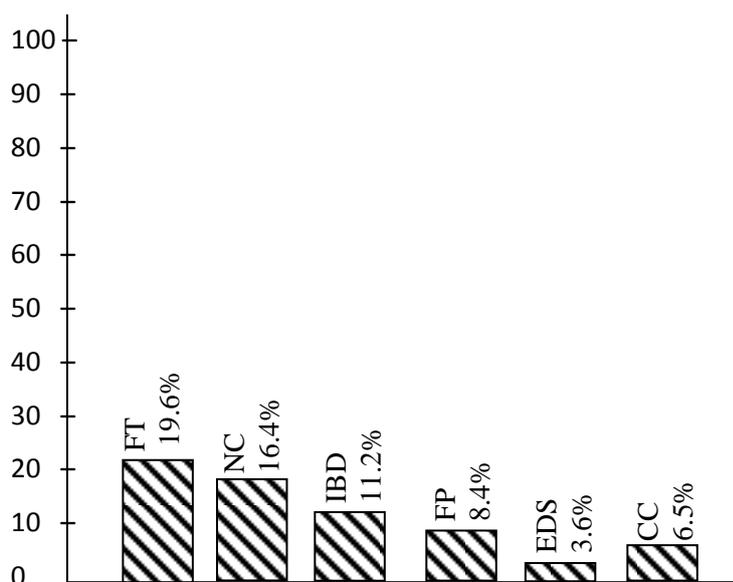


Fig 2: Bar chart shows diseases, due to vaccine failure. FT = fowl typhoid, NC = Newcastle disease, IBD = infectious bursal disease, FP = fowl pox, EDS = egg drop syndrome, CC = coccidiosis

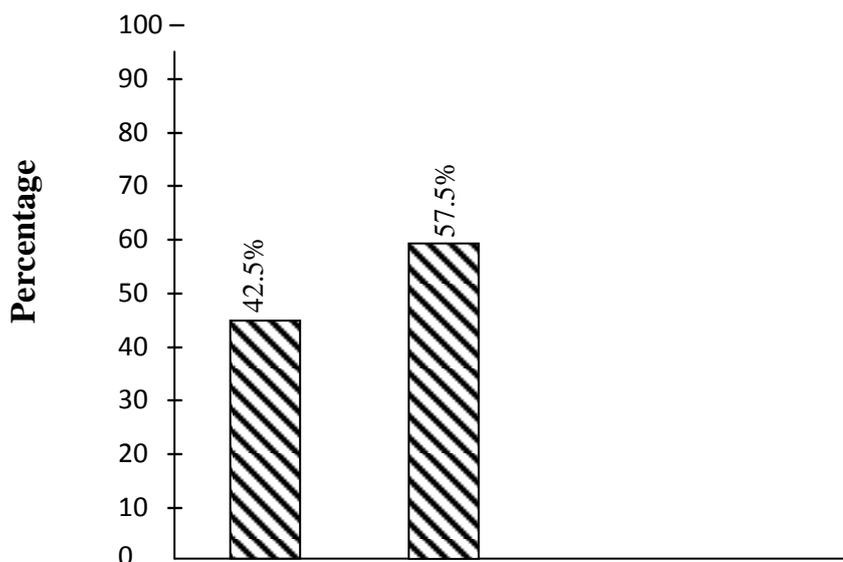


Fig 3: Occurrence of vaccine failure among poultry farmers in Aba

4. DISCUSSION

The study shows that 51.8% of the respondents were within the age bracket of 25 – 40 years. This represented the highest poultry farming population as shown in table 1. There was more male respondents and farmers as represented by 85.4% than the female. Majority of the poultry farmers were traders who also involve themselves in poultry farming and this was represented by 55.4% which is the highest among the occupation group. The highest level of respondents had secondary education presenting 64.5%, this finding is however in contrast with the fundings in Kenya which reported that 63% of commercial chicken farmers had tertiary education [13,14] From table 2, it was shown that 61.8% keep to the instruction of the manufacture of the vaccine. This is not impressive enough as it contribute to vaccination failure. The efficiency of vaccination depends largely on the handler or farmer keeping to the directive of the manufacturer and this was in agreement [15]. The respondents are of the view that 83.6% and 81.8% vaccinate birds only in the morning and evening as well as keep to the route of administration. This is good, an indication that proper vaccination protocol improves the level of immunological response in vaccination birds and this is in agreement [16]. The respondents presented 25.4% of farmers who vaccinate birds when they are sick, this implies that the number of farmers that are informed about good management practices and importance of vaccination which is to improve the immune response based on the health status of the birds are still low and this was in agreement [17]. The fact that 64.5% starve their birds of water before vaccination is good and this encourages the birds to drink enough of the vaccine water within a short time, however, 46.3% of respondents purchasing their vaccine from veterinary clinic while others source theirs from other local shop outlet explains the reason while cold chain of the vaccine is broken. It is very important to maintain the vaccine cold chain because this is a must in keeping the livability of antigenic material and this was in agreement [18]. From the study, it was observed that only 38.2% respondents consult their veterinary personnel before vaccination which is rather poor. The underlying indices could be responsible for vaccine failure. From fig 1, the incidence of coccidiosis outbreak due to vaccine failure was low at 6.5%, the reaction could be due to the involvement of trained veterinary personnel in the administration of the coccidiosis vaccine (Immucox) and this was in agreement [18]. The overall percentage of respondent that had vaccine failure at one time or the other stood at 42.5% while various misuse of vaccine coupled with other factors such as the status of the immune system of the flock, stress, poor management practices and the quality of the vaccine all of which are not part of this study would contribute to vaccine failure and this was in agreement [19].

5. CONCLUSION

Most of the respondents were male that was in their prime of age, the level of education of the respondents was mainly secondary education, and the respondents took poultry farming as part-time occupation. Most farmers vaccinated their birds in the morning and evening and kept to the route of administration. A reasonable number of respondents vaccinate sick birds and about half of the respondents source their vaccine from local shop outlet. About half of the respondent had failure at one time or the other.

It is most important that veterinarians are used for every vaccination in the poultry industry to reduce the possibility of vaccine failure. A high level of enlightenment is necessary to create awareness on the right sources where vaccine could be obtained.

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