

TECHNICAL BULLETIN

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Pigeon Diseases and Management in Northern Bangladesh

Pigeons are very familiar domestic birds in Bangladesh. These birds are reared in homesteads as well as commercially in bird farms. The environment in Bangladesh comprising the weather and presence of vast areas of crop fields as feeding grounds along with housing premises provides a suitable habitat for pigeons. There is a lot of demand for squab meat in the market due to its delicacy and taste. Pigeons are also used in natural beautification and as ornamental birds for recreation. Relatively low investment, minimum care, feed, low housing costs, easy and economic husbandry practices, short reproduction cycle and low disease occurrence make pigeon farming quite a lucrative and profitable livestock enterprise in Bangladesh, which may be an easy and reliable employment opportunity, a way of family labor utilization for cash incomes. Along with chickens, pigeons may help minimize the animal protein shortfalls for nutrition security of the Bangladeshi populace.



Pigeons reared in Bangladesh predominantly belong to the Gola (native) breed for squab production. Two types of pigeons are commonly available in Bangladesh, one is the domestic pigeon and the other is the *Jalali* pigeon. Many commercial pigeon farms have been established in different districts of Bangladesh viz., Dhaka, Chattogram, Rajshahi, Natore, Pabna, Dinajpur, Khulna, Rangpur, Kustia, Narshindi, Jenaidah, Jashore, Naogaon, Gazipur, Patuakhali, Barguna, Mymensingh, Bandarban, Cox's Bazar. These farms rear ornamental, high quality and fancy pigeons whose market prices may be as high as a few thousand taka per pair. Moreover, about 10,000 small and large pigeon farms have been established in different districts of the Rajshahi division.

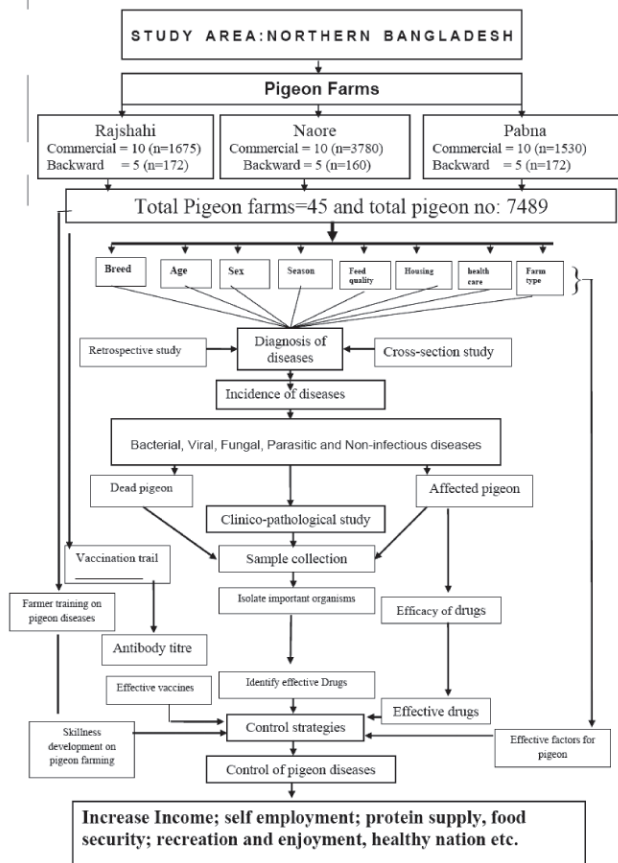
According to the Agricultural Sample Survey in 2013, the pigeon population in Bangladesh was 10.8 million of which 11% belonged to commercial farms. Unfortunately, every year, some disease epidemics affect the pigeon population killing a large number of pigeons, and about 30% of the pigeon mortality in Bangladesh is accountable to these disease epidemics. However, to date, there has been no systematic research on pigeons in the country. The present study was conducted by the Department of Veterinary and Animal Sciences, Rajshahi University (RU) in collaboration with the Department of Pathology, Department of Microbiology, Department of Parasitology of BAU, Mymensingh and Bangladesh Livestock



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Research Institute (BLRI), Savar, Dhaka. The major objectives were to identify diseases of pigeons in northern Bangladesh, determine the causal agents and develop clinical management practices for disease control. The study area comprised three districts of the Rajshahi Division namely, Rajshahi, Natore and Pabna.



Flow chart of project activities

Results and Outputs

Out of 7489 pigeons observed in the northern districts, 1592 were sick and 1176 dead within one year. The overall morbidity and mortality rates were recorded as 21.25% and 15.70%, respectively. The highest mortality rate was observed in the local breeds (23.35%) while mortality was about a half (11.80%) in exotic breeds. The strain and age of pigeon, effect of housing, condition of pigeon rearing (cleanliness, etc.), farm size and location and season significantly affected the pigeon mortality rate. Mortality was higher in younger pigeons than in older ones. Good quality feed, regular vaccination and regular deworming in farms minimized disease incidences in pigeons.



Staring eye in symptom of pigeon in ND and Salmonella



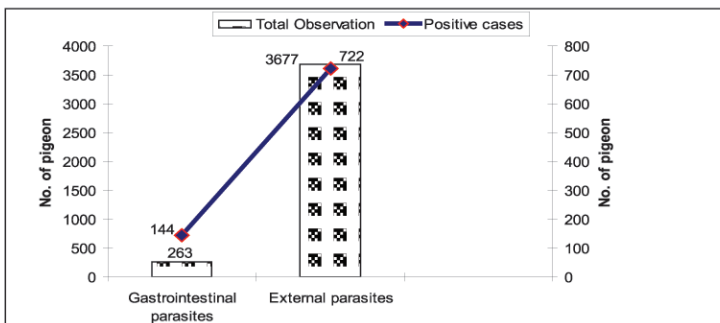
Arthritis in pigeon due to staphylococcus infection

The Newcastle disease (ND) pox, papillomatosis, staphylococcosis and round worm infestation have been diagnosed in study area through histopathological tests.

Various bacteria, viruses, parasites, nutritional deficiencies, etc. were found to be responsible for the diseases in pigeons. The ND in pigeon was diagnosed by observing clinical signs such as drowsiness, greenish-whitish, diarrhea and head turning. At necropsy, cloudy air sac, pin-point hemorrhage at tip of proventricular gland were clearly observed.

Percentages of different diseases of pigeon in the study area

Causes	Etiological agents		No. of dead pigeon	Percentage (%)
Bacterial	Salmonellosis		224	19.09
	Escherichia coli		49	4.16
	Mycoplasmosis		90	7.65
	Overall =		363	30.86 ^d
Viral	Pigeon pox		365	31.03
	Newcastle disease		228	19.38
	Papillomatosis		6	0.51
	Overall =		599	50.93 ^a
Parasites	Protozoan	Canker	13	1.10
		Coccidiosis	28	2.38
	Endoparasite	Round worm	7	0.60
		Tape worm	4	0.34
	Overall=		52	4.42 ^d
Nutritional deficiencies	Vitamin deficiency		6	0.51
	Mineral deficiency		4	0.34
	Overall=		10	0.85 ^c
Miscellaneous	Arthritis		5	0.42
	Heat stock		6	0.51
	Poisoning		122	10.37
	Accidental death		19	1.61
	Overall=		152	12.92 ^c
Grand total	1176		100.00	



Prevalence of gastrointestinal and external parasites in pigeons

In the study of the prevalence of gastrointestinal and external parasites in pigeon in northern Bangladesh, it was found that out of 3677 pigeons, positive cases in case of external parasites were 722 and in case of internal parasites, 114 positive cases were found from 263 feces samples.

Remedial measures

Different drugs and vaccines were tried against specific pigeon diseases. In case of *Salmonella* and *E. Coli* infections, Doxacycline worked best (93.66%) in terms of rate and early response to this disease. In case of mycoplasma, the maximum efficacy was observed with Tiamutin 45% (93.33%). Azithromycin worked best against viral diseases (66.66%). Toltazuril performed well (80.00%) against coccidiosis. The vitamin-mineral premix gave good results against ailments caused by nutritional deficiencies. Piperazine citrate and Levamisole worked as effective anthelmintic agents against ascariasis (80.00%) and capillariasis (79.00%).

Benefits and Impacts

- ❖ Different pigeon diseases and risk factors have been identified in northern Bangladesh
- ❖ The causal agents of common diseases have been determined
- ❖ The clinical signs and symptoms and histopathological lesions have been studied on pigeon rearing module “Pigeon Rearing Manual” and pigeon diseases book “Adhunik Poddhotite Kobitor Palan O Rog Badhir Chikithaha” have been published; mobile pigeon hospital services have been established for the first time
- ❖ Lead pigeon farmers from three districts were trained and they developed skills for the detection of pigeon diseases
- ❖ Farmers were motivated in getting their pigeons vaccinated and de-wormed; the mortality rate of pigeons in the study area was reduced to 5.08% from 15.25% within a year
- ❖ Family incomes of farmers’ can be increased through pigeon rearing
- ❖ Pigeon rearing can be an effective way of self-employment for the youth and women farmers.

Recommendations

- Pigeon farmers need to be provided with highly adapted pigeon breeds and trained in proper management, balanced food rations, adequate medication and vaccination.
- Disease testing laboratory facilities should be improved.
- Findings of this project should be disseminated by DLS and BLRI.
- The running experimental on hospital at the Narikalbaria campus of this project can be used as a mobile clinic with online services for the whole country.
- This research should be extended over Bangladesh to identify control pigeon diseases.

This technical bulletin has been prepared on the basis of technical information available from a completed CGP project of KGF, the details of which are given below:

Project Code and Title: TF 20-EM/15. Studies on pigeon diseases in northern Bangladesh

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