

**WASTE FROM CHICKEN DRESSING CENTRES AS FERTILIZER FOR  
COCONUT TREES -TO REDUCE THE VOLUME OF FOOD AVAILABLE  
TO PARIAH KITES MILVUS MIGRANS IN THE BUFFERZONE  
OF CALICUT AERODROME.**

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**Abstract**

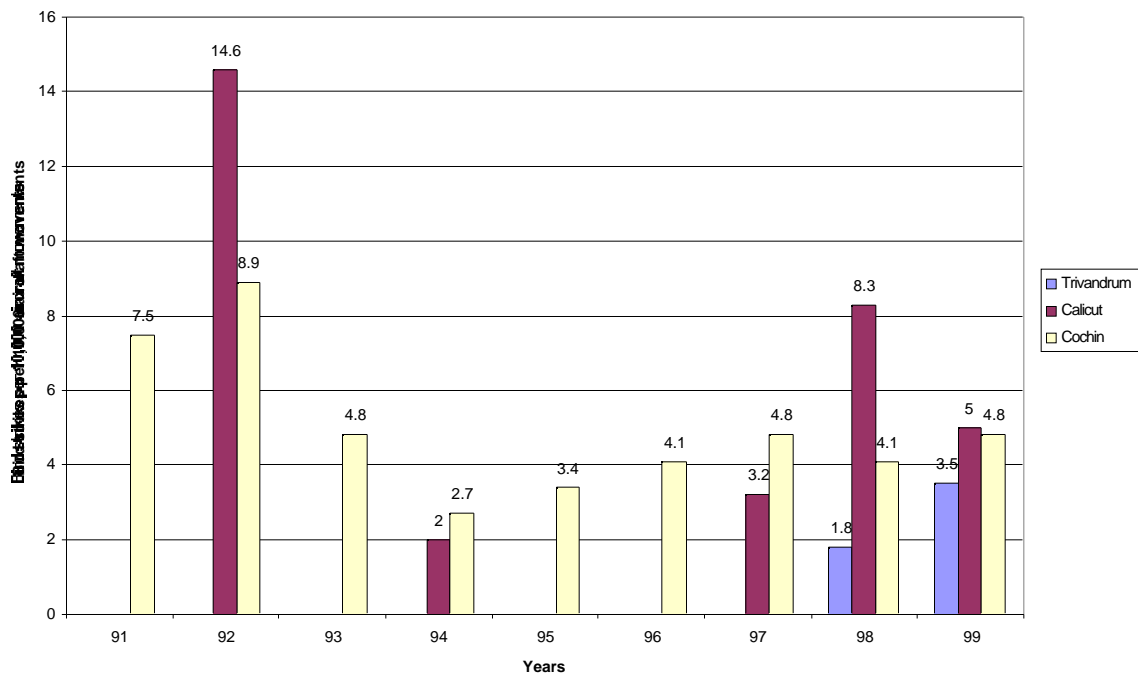
The Pariah Kites continue to strike aircrafts in the aerodromes at Calicut Cochin and Trivandrum Kerala, State India even though the Governments have taken some preventive measures. The tremendous increase of urban human population increases the extent of pollution, neutralizing all efforts to abate pollution. In Trivandrum and Calicut much of the garbage and animal wastes are transported to municipal waste dumps, but left unprocessed. There the wastes decay and pollute the atmosphere. The Governments say they have no funds to install abattoirs or waste processing plants. A low-cost but ecofriendly method for using chicken wastes as fertilizer has been developed by stall owners and planters in and around the town of Kondotty, situated close to Calicut aerodrome. Kondotty had scores of open slaughter points and chicken dressing centres from where tons of animal wastes are left in the open. These wastes attract hundreds of Pariah Kites. After feeding the Kites move on to the operational area of Calicut aerodrome. Now the chicken wastes are being collected in the shops and transported regularly to coconut plantations. Buried in pits four feet square and five feet deep, layers of chicken wastes are interspersed with layers of soil. These pits are 4-5 feet distant from the base of coconut trees and cause no foul smell. The planters using chicken wastes as fertilizer report much improved yield of coconuts and more planters are trying the practice. Quantitative data on the productivity of trees have to be collected. We are urging the Governments to start proper abattoirs and processing plants to cover slaughter wastes too.

**Key Words:** Pariah Kites, Calicut Aerodrome, Garbage, Waste disposal, Coconut trees, Fertilizer, Abattoirs, Processing plants, Pollution

## 1. Introduction

This paper is based on a continuation of our long term voluntary work on bird hazards in the airports of Kerala State, India, reported in the proceedings of IBSC 24 (Mathew et al. 1998) at Stara Lesna Slovakia. The Pariah Kites (*Milvus migrans*) continue to strike aircrafts in our aerodromes at a rate of about or below 5 collisions per ten thousand aircraft movements (Fig 1.). More people are aware of bird hazards now and some important new steps have been started recently by the public in the buffer zone of Calicut airport (11°7'N x 75°55'E) towards reducing the volume of wastes from the chicken industry, which used to serve as food for omnivorous birds.

Fig 1. Comparison of number of bird strikes on aircraft in three airports of Kerala



## **2. The Calicut Airport – Background**

This airport has several attractions for birds.

- 2.1 Its situation on a hill surrounded by other hillocks generates thermals used by birds for soaring.
- 2.2. The densely populated villages and small towns of the buffer zone generate vast amounts of food in the garbage dumps, centres of open slaughter and chicken and fish markets. There are many of such shops at Kondotty, a town 1.5 kms. distant from Calicut airport. There is no infrastructure for waste management and the birds exploit these waste materials as source of food. (Sreekumar 1991)
- 2.3. Coconut is an important crop of the district and kites find ideal sites for nesting on the trees.

## **3. Measures taken for bird hazard reduction**

- 3.1. The root cause of bird hazards in the airport is uncontrolled increase of human population in the buffer zone with no corresponding increase of facilities for healthy life, like space and facilities to collect and process waste. Our efforts were to increase the awareness of the problem among all the citizens. With many years of experience we knew the ecological requirements of the birds. We met the airport and state government officials, the traders, the presidents of panchayats and the general public and explained the dangers unmanaged waste and garbage were creating to public health and aircrafts. The airport officials at Calicut aerodrome were indifferent to our warnings begin with, but they became agitated and quite active after the first bird strike in Calicut in May 1992. That year the rate of bird hits rose to over 14 per ten thousand aircraft movements. We were also writing to the successive Chief Ministers of the State about the bird hazards to aviation.
- 3.2. The State Government issued orders making throwing of slaughterhouse wastes in public places punishable. Armed with the order the airport officials confronted the beef and chicken traders. The latter were till then, throwing the chicken dressings to the nearest vacant space or dumping these in the river.
- 3.3 There are many projects now of both government and private agencies to clean up the roads and the countryside, removing garbage.

## 4. Results

### 4.1 The chicken traders develop an eco-friendly way of waste disposal

Some chicken traders, and a progressive young farmer of Kondotty, Erathali Majeed, found a sound use for chicken dressings. A chicken shop generates about 100 kg. of wastes on an average; enough food to support 400 Pariah Kites for a day. On very busy days upto 500 kg. of wastes might accumulate in such a shop. The chicken stall owners now pack the wastes in jute bags and the farmer transports the bags to his coconut plantation. He is paid over 2 \$ per day. In between the coconut trees, 4-5 feet away from the bases of the trees, pits (4" x 4" x 5") are dug and the chicken dressing spread in several layers interspersed with layers of soil. The pits are neatly covered and the trees are watered during summer. The farmers say that the yield of nuts has improved considerably in such plantations and the practice is spreading in that village. Exact quantitative data of productivity of the trees are not available but the people of Kondotty are good businessmen who would not follow a practice, which is not profitable.

### 4.2 To the ecologist the use of chicken waste as fertiliser is very advantageous.

4.2.1. It cleans up the environment and improves public health.

4.2.2. It reduces the volume of food for the kites.

4.2.3. It utilises a source of energy more than half of which would otherwise have been lost via decay chains in the wrong places.

4.2.4. Dumping chicken wastes in the river was the usual practice for the shops close to the river Chaliyar which is already over loaded with industrial pollutants. If part of the chicken dressing is converted into fertiliser the river will be that much cleaner.

## 5. The wastes of slaughter of cattle

5.1. The wastes of the beef trade are much more voluminous and difficult to manage. Four slaughtering centres were producing 102 kg. of waste excluding bones per day in the town of Kondotty. (Sreekumar 1992) The present figures could be much more. The wastes were thrown in vacant spaces and bones kept uncovered in the market or in bags on the roads. This caused severe atmospheric pollution and attracted birds. New laws forbid such activities. The beef traders say that they are now burying the

soft wastes in their own compounds. This may not be entirely correct. They are probably dropping some of the wastes in distant nullahs and unused old wells. In either case the practice is dangerous as decay products of animal matter could contaminate ground water used for drinking. Some of the farmers are considering vermiculture as a solution.

#### 5.2. Steps urgently required, for treatment of animal wastes.

The wastes of beef industry in the airport's buffer zone will be so voluminous that the ultimate solution to this form of pollution is the installation of large waste processing plants. This will require space and machinery. This is a step the Kerala Government must take urgently. It is some consolation that the Government of India has adopted a new population policy aimed at bringing human fertility rate to replacement levels by 2010. The long-term goal will be to achieve a stable population by 2045. This will be hard to achieve due not only to the political pressures but also to the tardy, density dependant factors (Odum 1971) working on populations, which decelerate the corrective action.

## 6. Conclusion

The problem of bird hazards to aircrafts in the aerodromes of Kerala is the result of over population and crowding of human beings in the buffer zone. Even though population cannot be stabilised within a small duration of time proper information given to the public and officials about the consequences of pollution could produce positive results. The innovation of using chicken waste as fertiliser for coconut plantations in Kondotty is a good example. The state government of Kerala has taken some measures to eliminate garbage. They must start proper abattoirs and plants for processing animal waste into useful products. The new population policy to bring down fertility rate to replacement levels by the central government will be welcomed by ecologists.

## Acknowledgements

We are grateful to the Officer Commanding, INS Garuda, Commodore Sengupta and Commanders K. C. Ponnaiyan, V. N. Sharma and Lt. Comd. G. Mohan of the Cochin Naval Air Station for their co-operation. We would like to thank the directors of Cochin International Airport and Trivandrom International Airport for their help. We record our sincere thanks to the Flight Safety Managers of Trivandrum, Cochin and Calicut International Airports and the SFSO of Cochin NAS for making the records of bird strikes available to us and their guidance in our field work in the operational area of these airports.

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