

AN ATTEMPT TO ARTIFICIALLY INCUBATE AND RAISE CHICK OF EDIBLE-NEST SWIFTLETS

(Percobaan Penetasan Buatan dan Pemeliharaan Anakan Walet Sarang Putih)

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ABSTRAK

Penelitian ini merupakan suatu eksperimen penetasan buatan dan pemeliharaan anakan walet sebagai dasar untuk kegiatan pembudidayaan spesies ini. Untuk itu dilakukan dua seri penelitian. Metode yang telah dipakai kemudian diperbaiki dan diuji lebih lanjut pada eksperimen kedua, melibatkan penggunaan-penggunaan tiga mesin tetas yang berbbeda (Lyon Rural Electric, Eka Pourty dan Biro Rehabilitasi). Contoh telur diambil dari Jawa Tengah untuk kemudian ditetaskan di Bogor. Pada percobaan pertama, hanya 28% telur berwarna putih yang berhasil menetas. Telur berwarna merah muda maupun putih-merah muda tidak ada yang menetas (χ^2 , $p < 0.01$). Anakan dapat dipelihara hingga akhir penelitian meskipun tingkat kematian sangat tinggi (91.7%). Pada eksperimen kedua, keberhasilan penetasan dapat ditingkatkan menjadi 80%. Tidak ada perbedaan nyata dalam keberhasilan penetasan antar ketiga mesin tetas yang digunakan (uji χ^2 , $p < 0.05$). anakan yang diberi pakan tahu dan rayap tidak dapat bertahan masing-masing hingga hari ke 11 dan 16. Pakan kroto dan campuran kroto-rayap dapat membuat anakan bertahan hidup sampai melewati masa sapih (45 hari), meskipun perkembangan berat badannya masih di bawah anakakan yang dipelihara secara alami oleh induknya.

Kata kunci: Walet Sarang Putih, karakteristik telur, penetasan buatan, pemeliharaan anakan, pakan buatan, pertumbuhan anakan.

INTRODUCTION

The Edible-nest Swiftlets *Collocalia fuciphaga* (Thunberg) 1812 are considered to be highly valued bird species, are they produced expensive nests made of their saliva. People harvest the nest from limestone caves or swiftleft houses, especially built to resemble cave environment.

Being a wild species, lately there was some idea to start to breed this species in cavity, at least in the early stage of thr bird. Up to now, there was no published record on the artificial incubation and hand-rearing of

the chicks. The objective of this study was to conduct a two-series of trials on the articially incubation and hand-rearing of the Edible-nest Swiftlets. Results of this study hopefully will trigger further research on the captive breeding effort of this species.

METHOD

The study was conducted in two series. The preliminary trial was done in April-June 1996, and the randomly selected of egg samples (n=140) was taken from Blora, a small town in Central Java. The egg were

obtained from an egg collector. However, there is no information on the age of the eggs nor the exact origin of the eggs.

The eggs were transported (on land) from Blora to Semarang, (3 hr drive approx.), the capital city of Central Java. The egg then transported immediately by air from Semarang to Jakarta (40 min. flight), then transferred on land to laboratory in Bogor (2 hrs drive). During the transportation, the eggs were placed within a foam container to prevent from shaking.

The eggs were weighed using a Ohaus mechanical balance to the nearest 0.01g. their length and width were also measured using a standard caliper to the nearest 0.01mm. the incubator used for the incubation experiments was Lyon Rural Electric Co. Model #A-453, serial #115V AC, herewith refer to as Lyon Rural Electric. It was kept in a constant temperature of 34°C and relative humidity of 70%. Prior to the incubator was calibrated, but not fumigated.

The hypothesis used for the incubation trial was there was no relationship between egg color and hatching success. A χ^2 (Steel & Torrie 1980) was used to test the hypothesis. Prior to the incubation trial, the eggs were tested (t-test) to investigate whether there was any differences in weight, length, or width. The body weight of the chicks was monitored daily and weighed using a mechanical Ohaus balance the nearest 0.01 g. The data was plotted in a graph and analyzed.

Based on the preliminary trial, the technique of transporting, incubating and hand rearing of chicks were obtained. For the second trial, the eggs (n=100) were carefully selected based on color and transported on land, from Semarang to Bogor (10 hr. drive), avoiding transported by air. The same procedure of the first trial was also applied for the second trial.

To test the performance of the incubation, three incubators from different make were used. The first incubator was Lyon Rural Electric from the previous trial. The

incubator in the second trial was calibrated and fumigated prior to the trial. The other two incubators were made by Eka Poultry Industrial Enterprise, Semarang (herewith refer to as Eka Poultry), and made by Bureau for Swiftlet Rehabilitation, Surabaya (herewith refer to as Rehabilitation Bureau).

A χ^2 was used to test the hypothesis of no difference on the hatching success of chicks by using the three different brands of incubators. Among the 80 chicks hatched, 70 individuals were selected for further study for feeding trial. The chicks were given 4 different diet, namely tofu, termites, kroto and mixed diet.

Tofu diet was steamed prior to feed on the chicks. Species of termites used were *Macrotermes inspiratus*, *Odontotermes grandiceps*, and *Neotermes* sp. The use of different species was due to the limited availability of the termites during the study. Kroto is a local name for larvae of *Oecophylla smaragdina*, a species of red ants that usually live on trees. It is a common food for song bird and easily can be bought in the local bird market. The mixed diet consisted of 50% termite and 50% kroto.

Due to the limited availability of foodstuff, especially termite, the number of chicks assigned for each food category was not the same: 21 chicks were given tofu, 4 termites, 41 kroto, and 4 mixed diet. Food were given *ad libitum*, directly by hand for tofu or using a small forceps for the other three foodstuff. The study was limited to 45 days. At this time birds are considered ready to leave the nest (Mardiastuti, 1999). The body weight also was monitored as in the preliminary study.

RESULT AND DISCUSSION

Preliminary Trial: Egg Characteristics and Hatching Success

The egg of the Edible-nest Swiftlets are oval, weighting less than 2g (Table 1).

Although basically the color of the eggs was white, slight differences in color occurred. The color was grouped as pink, pinkish-white, and white. The t-test suggested that the weight, length, and width of the 3 different color groups was the same ($P>0.05$). This will make sure that the different among these groups was solely due to the color.

All of the pink-colored eggs failed to hatch, neither did the pinkish-white eggs. Some of the later group managed to survive prior to hatching time but unfortunately all of them died during the hatching process. Apparently the chicks was too weak to crack the eggshell. Among the white-colored eggs, almost half of them hatched and survived (Table 2). The rest of the eggs was either did not hatch or died during hatching process due to the disability to crack open the eggshell. The χ^2 test revealed that there was a high correlation between the egg color and the hatching success ($\chi^2= 3.41, P<0.01$).