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Keywords

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Abbreviations

mtDNA: mitochondrial DNA; OLR: One Loft Race; RC: Race Coefficient; L: Long Distance; M: Medium Distance; S: Short Distance; WZ: Female; ZZ: Male

Case Report

The Impact of Gender in Young Bird Pigeon Racing

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Abstract

Selection of a bird for an One Loft Race (OLR) that has a higher probability of winning is desired given the cost of entry. The objective of this study was to determine if there is a difference between female (hen) and male (cock birds) racing pigeons with regard to performance in OLR. A hypothesis was generated after a pilot study in 2017 with 103 birds; Null-hypothesis: there is no difference between hen and cock birds with regard to race performance. A subsequent prospective double blind study was conducted with 124 birds divided over 14 OLRs in 2019. Our study showed that there was indeed no difference between genders in race performance over all or within any distance category.

Introduction

Winning an OLR is dependent on many factors like weather, fancier, pigeon related factors (e.g. genetics) etc. Because entry in an OLR is not cheap, it is advantageous to be able to select a bird for entry that has a higher probability for success. In our explorations, we previously published that mtDNA is unlikely to play a role [1]. Among pigeon fanciers, it is generally assumed that hen birds will perform better on long distance races. However, not many scientific studies have been performed on gender differences and performance. Anecdotal observations are retrospective and not taking into account other factors like differences in motivation, management or the denominator of hens and cock birds participating in the race. In our study we address for these factors. In OLRs the motivation for all birds is the same. Inclusion of multiple OLRs evens out any potential differences in loft management. This study reports the comparison of race performance of hens versus cock birds in 14 OLRs in 2019.

Methods

There were two studies performed; a hypothesis generating study in 2017 and a confirmatory study in 2019. In 2017, at our loft 17 breeding pair produced 103 birds; 54 cock birds and 49 hens. In 2019, 17 breeding pair produced 124 young birds. 71 birds had a race result in one of 14 OLRs and were included in the analysis. There were 39 hens and 32 cock birds. Performance measurement is based on Race Coefficient (RC) calculated as place won divided by number of birds in the race. Hence a lower number indicates a better performance. This is a continuous measurement of performance rather than an artificial ranking or point system. Results are reported over all races combined and by race distance. Medians are reported for each group as medians are a better reflection of group performance than means, and less susceptible to individual outlier values. Races were grouped in 3 distance categories: short distance (70-160 miles); middle distance (161-260 miles), long distance (261 miles and more).

Double blinding

In the 2019 study, the genetic analyses on gender were conducted before the races were flown and without the knowledge in which race any particular bird was entered. The race managers did not know the outcome of genetic analyses. Genetic determination of gender was conducted by Animal Genetics Inc. Tallahassee, FL USA.

Statistical

For the analyses of race coefficients for the effect of gender, the method of Kruskal-Wallis [2] was applied. Box plots were generated to display outcomes among the various factors of interest. P-values were unadjusted for multiple testing.

Results

In 2017, in the hypothesis generating study, there were 49 Top 10% places won in races between 100 and 350 miles in 13 OLRs. These 49 Top 10% places were won 26 times by a hen and 23 times by a cock bird. Race coefficients for those 49 positions were 0.043 for the hen birds and 0.045 for the cock birds. In races over 300 miles there were 15 Top 10% positions won, 10 by hens and 5 by cock birds. The latter may suggest a possible better result for hens on long distance in this hypothesis generating study, but is based on small numbers and needs to be confirmed in the 2019 study. In the 2019 confirmatory study, across all races the RC for the 39 hens was 0.03 and for the 32 cock birds 0.318 (Table 1). The RC per distance is presented in Figure 1. There were no statistically significant differences overall (p=0.98) or within any distance category (p=0.86, p=0.18 and p=0.45 for long, medium and short distance races).

Table 1: Summary statistics for race coefficients overall.

Gender	Number of Observations	Race Coefficient
Female n=39	267	0.300 (0.004, 0.992)
Male n=32	291	0.318 (0.004, 0.975)

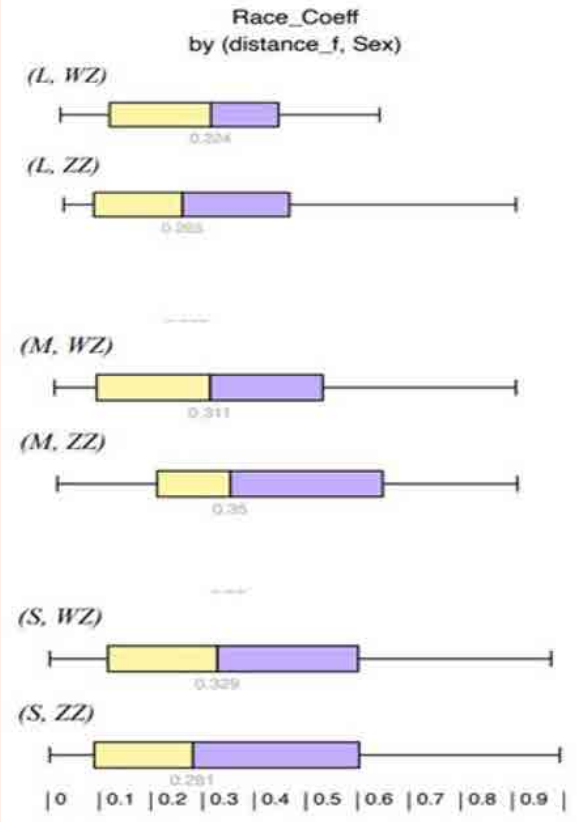

Figure 1: RC by distance and gender.

Discussion

Selecting a bird with a higher probability for good race performance remains a challenge for any fancier participating in pigeon racing and in OLRs specifically. Several studies have been reported on genetics [3-8], but a predictive genetic profile is still to be determined [9]. Also our study on mtDNA did not provide a tool for such selection process [1]. Anecdotal reports and a recent a retrospective observation by Vanermen [10] suggested that hens outperform cock birds on the long distance races. These observations did not adjust for any other factors such as the number of hens or cock birds entered or for any motivation methods applied. Furthermore gender assignment in race reports is not always correct. In our 2019 study, genders for all 124 birds were assessed by molecular analysis by an independent laboratory. Also the race conditions in our study were such that there were minimal or no differences in other factors like motivation. The objective of our study was to study at the impact of gender in OLRs in a prospective manner minimizing impact of any other factors.

Conclusion

Based on our study, for selecting birds to enter in OLRs, gender is not a factor to be considered.

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