PP-158

One of the Factors Causing Diversity in an Animal Population: Multiple Paternity

Fikret SARI[1], Adile SARI[2], Pınar İLİ[3]
[1]Department of Plant and Animal Production, Tavas Vocational School, Pamukkale University, Turkey
[2]Department of Electronic and Automation, Denizli Vocational School of Technical Sciences, Pamukkale University, Turkey
[3]Department of Medical Services and Techniques, Denizli Vocational School of Health Services, Pamukkale University, Turkey
pili@pau.edu.tr

Aim of the study: If it is very difficult to observe individuals of a species while mating, paternity studies provide an important tool for determining which individuals are contributing to species persistence. Recent advances in genetic analysis have shown that multiple paternity (MP), which occurs as a result of mating of females polyandrously, is frequent in both invertebrates and vertebrates. Frequency of MP shows inter- and intra-specific variability. In this review, we aimed to inform about MP studies on different species and to draw attention to effect of MP on genetic diversity within species and population.

Material and Methods: We searched the literature for studies on MP. We reviewed their results and discussed the possible effect of MP/multiple mating on genetic diversity within a population of a species in light of the results of reviewed articles.

Results: It is clear that paternity studies provide insights into mating behaviours of individuals of a species and their population structures. The prevalence of MP varies widely both from species to species and from location to location within a species but has been documented in various taxa as diverse as snail (*Helix aspersa*), squid (*Loligo pealeii*), sharks (*Squalus acanthias*), salmon (*Salmo salar*), grunion (*Leuresthes tenuis*), frog (*Crinia georgiana*), sea turtles (*Caretta caretta*, *Chelonia mydas*), and mice (*Mus domesticus*). There is common certain belief of the MP/multiple mating that the high frequency of MP implies the possible high genetic diversity and effective population size for a population. Therefore, we can suggest that if it is impossible or difficult to study an animal population genetically, paternity studies should be carried out to obtain indirect information about that population. In addition, it is well known that MP enables the number of offspring produced to increase and new generations to be more viable and variable due to genetic diversity. In conclusion, MP/multiple mating is an evolutionary adaptation. Female individuals benefit from multiple mating and can assure the species persistence by mating multiply.

Keywords: Multiple paternity, mating, genetic diversity, population, species persistence