Seasonal pattern of variation in individual growth rates of the Common hamster

Ivana Petrová1, Martina Bendová1, Jan Losík1, Emil Tkadlec1,2

1 Department of Ecology and Environmental Sciences, Faculty of Science, Palacky University Olomouc, třída Šlechtitelů 11, 783 71 Olomouc, Czech Republic

2 Institute of Vertebrate Biology Academy of Sciences of the Czech Republic, Květná 8, Brno, Czech Republic

E-mail: [buble.i@seznam.cz](mailto:buble.i@seznam.cz)

Variation in somatic growth and body size are among key life-history traits determining reproductive success and fitness in most rodents. Most developmental studies in the common hamster (Cricetus cricetus) were carried out in captivity whereas those describing growth in hamsters from natural populations are rare. Here we report data on somatic growth rates of subadult and adult individuals from a suburban population in the southern part of Olomouc, Czech Republic, collected over a period of more than 10 years using livetrapping at monthly intervals. Body size was measured operationally as body mass and body length. We defined instantaneous growth rates as differences between two logtransformed body size measurements taken from the same individual in time and subsequently recalculated per week. We analysed the effect of season (the day of year), population density, sex and current body size separately in subadult (young individuals before the first hibernation) and adult animals (individuals after the first hibernation) by fitting multiple regression models. In subadults, growth rates were negatively related to their body size which accounted for the same variation as the season. No effect of population density was found. Growth rates in body mass but not in body length were higher in males than females. In adults, growth rates declined over the breeding season as a result of increasing body size accounting for all variation related to the season. Males grew faster than females. Moreover, growth rates in body length increased with population density. These data are in a good agreement with the previously reported data on variation in body size of hamsters in this population.