



XXIV International Congress of Entomology

'New Era in Entomology'

August 19-25, 2012 | Daegu, Korea

ICE 2012 DAEGU KOREA

PS3M358

Ecology

P3

Quantitative genetics of the Desert Locust's larval growth: Rate and life-history strategy

Benjamin Pelissie¹, Marie-Pierre Chapuis², Christine Pages³, Cyril Piou⁴

¹CIRAD, France, ²CIRAD, France, ³CIRAD, France, ⁴CIRAD, France

Schistocerca gregaria, the desert locust, which is distributed from north-west Africa to south-east Asia, is one of the most known and studied locust species. In order to prevent local human populations from the threat of pullulations, we need to know more about population dynamics of the desert locust, especially for the solitary populations which are less studied than gregarious ones. Predicting the evolution of population dynamics needs a good knowledge of life-history traits that influence population demography. Growth is one of these traits, since it is directly linked to the onset of sexual maturity, then reproduction. Moreover, in order to investigate the potential of selection on individual growth, one needs to evaluate its heritability by disentangling genetic and additive variation in traits phenotype from non-genetic variance due to other (environmental) factors. Here we present a work done on a first generation lab population of *S. gregaria* sampled in the field. We recorded individual larval growth of 15 full-sib families, based on body weight and morphology in controlled conditions. We describe larval growth by analyzing growth rate as well as several key variables involved in life-history strategy (body weight and size at emergence, growth rate until adult emergence, maximum body weight, age at adult emergence, larval strategy). Thanks to the known relatedness structure of our sample, we also calculate the heritability of those traits and make predictions about the ability of *S. gregaria* populations to respond to selection on larval growth.

Keywords: Desert locust, quantitative genetics, larval development, life-history strategies, heritability

All abstracts are subject to approval once submitted with the attendance certification issued by ICE2012