Metadata S4

Laure Vilgrain, Frédéric Maps, Sünnje Basedow, Emilia Trudnowska, Mohammed-Amin Madoui, Barbara Niehoff & Sakina-Dorothée Ayata

Copepods true colors: astaxanthin pigmentation as an indicator of individual fitness

Journal name: Ecological Monographs

- Description of:

Data S4. List of the effects of carotenoid pigmentation on fitness-related variables in copepods

This dataset gathered all studies classified as "redness and fitness" (column study_type, Data S1) and show the effect (favorable, neutral, unfavorable) of pigmentation on some fitness variables.

- Column details:

study, year: name of authors, year of publication

condition: environment of the experiment
mesocosm
in vitro
in vivo

forcing_variable: if copepods were exposed to a special condition (generally inducing oxidative stress) to then quantify the fitness-related response variable, the forcing variable was reported here:
UV_radiations (= *exposure to UV radiations*)
UV_radiations + fish_presence (= *exposure to UV radiations and fish presence*)
natural_light (= *exposure to natural light*)
natural_light x copper (= *exposure to natural light and copper*)
copper (= *exposure to copper*)
fish_presence (= *exposure to fish presence*)
predation (= *exposure to a predator*)
pro-oxidant (= *exposure to a predator*)
NA (= *no forcing variable*)

response_variable: fitness-related response variable
% Survival (= *percentage of survival*)
% Mortality (= *percentage of mortality*)
Red prey preference index (= *index quantifying predator selectivity on red morphs*)
% Consumed first (= *percentage of red copepods consumed first by predators*)

% Eaten by predator (= *percentage of red copepods eaten by predators*)
Median lethal time (= *median lethal time of individuals*)
Biomass (= *biomass*)
Parasite prevalence (= *prevalence of parasite = number of copepods with parasites for a given population, red or transparent*)
Aconitase activity (Oxidative stress level) (= *activity of aconitase proteins, sensible to ROS damages)*
CHE activity (UV Oxidative stress level) (= *activity of CHE enzymes, sensible to ROS damages)*
GST activity (Anti-oxidant capacity) (= *activity of GST enzymes counteracting effects of ROS)*
ORAC (Oxygen radical anti-oxidant capacity) (= *oxygen radical absorbance capacity)*
Trolox equivalents (Anti-oxidant capacity) (= *antioxidant capacity of water-soluble antioxidants*)
Hsp70 transcription (Oxidative stress level) (=*heat shock protein quantification, indicator of environmental stress*)
Egg ratio (=*number of eggs by female*)
Number of nauplii produced (=*number of eggs by females*)
Copepodits development time (=*number of nauplii produced by females*)
Sexual selection on red females (=*percentage of male choice: white or red females, or none*)
Grazing rate (= *difference between initial and final algae concentrations*)
Respiration rate (metabolic index) (= *oxygen consummation*)
RNA:DNA (metabolic index) (= *oxygen consumption*)
Respiratory chain – Complex I: ATP synthesis (= *ATP synthesis from isolated complex I of the electron transport chain of the mitochondria, measured by luminescence*)
Respiratory chain – Complex II: ATP synthesis (= *ATP synthesis from isolated complex I of the electron transport chain of the mitochondria, measured by luminescence*)
Swimming speed (= *movement of the animals from the number of vertical and horizontal lines crossed by an animal in 3 min time*)

unit: unit of the fitness-related response variable

fitness_component: component of the fitness to which the response variable belongs:
growth
reproduction
survival

fitness_effect: qualification of the correlation between the copepod pigmentation and the fitness variable:
favorable (= *significant and positive relationship*)
neutral (= *non signification relationship*)
unfavorable (= *significant and negative relationship*)

confidence: confidence level of the correlation we estimated according to statistics or methods used by the authors (see comments for more details):
high, medium or low

graph_order: 1 to 23, useful only for graphical presentation of the Figure 5

comments:
relevant information explaining how and where the fitness effect was estimated