

Metadata4

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

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

Journal name: Ecosphere

- Description of:

Data4. 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, Data1) 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