

## Analysis of developmental instability and plant potential fitness in a Mediterranean perennial shrub, *Retama sphaerocarpa* L. (Boiss.)

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Plants, as organisms with modular construction, are suitable subjects to detect developmental instability caused by environmental disturbance. Developmental instability is manifested as a developmental error reflected in an exaggerated intra-individual variation in repeated traits and patterns. The uncertainty of the curve fitting measured as the standard error of the regression, the standard error of the slope, and the coefficient of determination are good estimators of scale asymmetry. In this work, the statistical noise in allometric relations is used as an indicator of developmental instability in order to determine whether deviations of the translational symmetries of different structural traits are good indicators of plant performance.

The main object of this work is the study of the relationship between intra-individual variations on self-similar structural traits (as indicators of developmental instability) and plant potential fitness. Randomly selected shoots from different plants of a natural population of *Retama sphaerocarpa* (L.) Boiss. were monitored. Data on the morphology and the demographic processes occurred during plant development (determined from marks left on the persistent structure of the plant) were registered from the basal branch segment to the terminal branch segment or terminal shoot of the selected branch.

Different measures of developmental instability were analyzed and related with plant potential fitness, which is estimated from the demographic data of the

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modules of each plant (bud development, branch survival, etc).

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