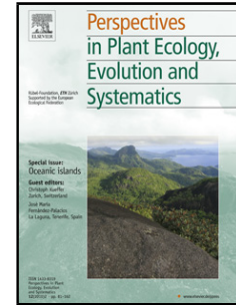


## Accepted Manuscript

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Zygophyllaceae-Zygophylloideae

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**Title: Nectar protection in arid-adapted flowers of Zygophyllaceae-Zygophylloideae**

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### Highlights

- Our study confirms protective function of staminal scales against nectar loss.
- We reveal synorganised evolution of staminal scales and nectaries as an adaptation to arid areas.

### Abstract

The survival of plants in arid areas depends on efficient adaptation to extreme environments. The protection against nectar loss is an important challenge for flowers in arid environments. Flowers of arid-adapted Zygophyllaceae subfamily Zygophylloideae are characterized by a peculiar structure called staminal scales (SS). The special arrangement of SS around the perigynous disc nectary (DN) suggests their adaptive function for protection against nectar loss. We aim to test the protective function of SS and to understand the synorganised evolution of SS and DN in relation to nectar protection. We, first, manipulate flowers by removal of SS in two

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