

## Ecophysiological Studies on *Cistus Palhinhae* Ingram and *Cistus Ladanifer* L. in Southern Alentejo

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### ABSTRACTS

*Cistus palhinhae* Ingram is an endemic plant from Portugal, with a non-consensual taxonomical position. Some authors consider it as a variety or sub-specie of *C. ladanifer* L.. Until now, the knowledge about *C. palhinhae* is limited, so we pretend to compare ecophysiological and anatomically both species in the same area. The study was performed in 3 sampling sessions in Cape Sardão region, where the two species occur. Plant cover structure, water potential and leaf area index were assessed. According to our results, ecophysiological processes are different between the studied species, especially the ones associated with the xeric features: *C. palhinhae* possesses marked xeromorphic adaptations, differing from *C. ladanifer* a semi-deciduos sclerophyll shrub.

### INTRODUCTION

*Cistus palhinhae* Ingram is an endemic plant from Portugal. Its distribution is limited to Abano beach, near Lisbon, (Capelo, personal communication) and to the area between Vila Nova de Mil Fontes and Sagres on the southwest Portugal, within the Natural Reserve of Costa Vicentina (ICNF, 2006). It is described as very similar to *Cistus ladanifer* L., "but of lesser stature (50 cm), denser canopy leaves 20-60 mm, pristine white flowers and 6-locular ovary" (Franco, 1971). *C. ladanifer* is widely distributed in the western Mediterranean region, from Portugal and Morocco to Algeria and Riviera (Castroviejo et al., 1995). In 1991 Demoly categorized *C. palhinhae* as *C. ladanifer* subsp. *sulcatus*, based on the distribution and habitat of the two species. Proksch and Gulz (1984) studied the flavonoids patterns, of the two *taxa*, that revealed to be similar. Wuerpel (1973) compared the number of valves per fruit and anatomical features of the leaves, concluding that the leaves allow a better distinction between the two species.

The Mediterranean climate, with rainy winters and dry summers, underlie the presence of woody sclerophyll evergreen plants and sclerophyll semi-deciduous plants with seasonal dimorphism (Aronne & Micco, 2001; Larcher, 1995; Werner *et al.*, 1999). Plants water balance depends on the processes of absorption, conduction and transpiration, having daily and seasonal variations. One way to minimize water losses is by reducing the leaf area (Pereira, 2003). There are other strategies such as "cushion" plants that occur in open areas highly exposed to wind. This greatly branched and closed structure creates a microclimate