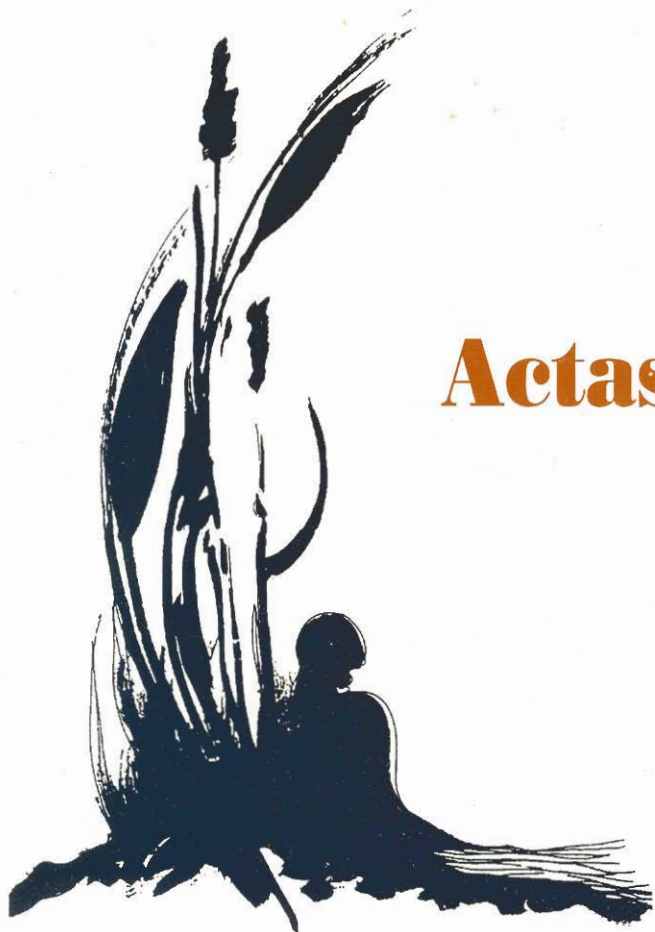




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# EFFECT OF TEMPERATURE ON THE GERMINATION OF *CISTUS LADANIFER* L.

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## Abstract

In previous laboratory studies involving heat treatments *Cistus ladanifer* had the highest promotion of germination at 90 °C, but water uptake by seeds due to seed coat rupture by heat could not account for the observed results. To investigate the hypothesis that increases in soil temperature resulting from the elimination of leaf canopy by previous fires might play a role in *C. ladanifer* fire-ecology, seeds of this species were incubated at constant and alternate temperatures. Lag and final germination are generally improved in a way consistent with the hypothesis under investigation. However, the stimulating effect is not great enough to account for the values of lag and final germination directly attributable to fire, and other explanations for the stimulus of *C. ladanifer* germination must be considered and investigated.

**Key Words:** *Cistus ladanifer*, fire, germination, temperature.

## INTRODUCTION

*Cistus* spp. are Mediterranean phanerophytes with germination promoted by fire (5). Possible explanations might involve 1) the enhancement of water uptake by mechanical rupture of seed coats, 2) a phytochrome-mediated mechanism responding to the increase of red/far red ratios after canopy removal by fire, or 3) the inactivation by fire of allelopathins present in soil or in seeds (3,4).

As reported before (6) the germination of *C. ladanifer* is consistently affected by heat treatments in a way and range of temperatures likely to be found by seeds during fires, with the seed coat mechanical rupture by heat unable to

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