

Morphology of Seed Coat of *Calystegia soldanella* after Acid pretreatment for Germination

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Objectives

A plant, *Calystegia soldanella* (Sea bells; Convolvulaceae) is endemic living in coastal sand dunes. It had been used as a traditional medicine for diuretic by using its subterranean stem. But, in vivo, seed germination ratio is very low due to hard seed coat. So we observed structure of seed coat of *Calystegia soldanella*.

In case of the presence hard seed coat such as *C. soldanella*, dormancy can be broken by seed coat loosening. Seed coat protects the embryo and endosperm from desiccation, mechanical injury, unfavorable temperatures, and attacks by bacteria, fungi, and insects (Bhojwani and Bhatnagar, 1999). So the study of seed coat can present good informations in the promotion of germination.

Materials and Methods

1. Materials : Seed of *Calystegia soldanella* (Sea bells ; Convolvulaceae)

2. Methods : I. Preparation of two seed groups for comparison
Control - Non pretreatment
Pretreatment - Soaking in 98% H₂SO₄ for 3hrs
(It showed germination ratio of 100%)

II. Observation of seeds with SEM

Non-pretreatment seeds and pretreatment seeds with 98% H₂SO₄ for 3hrs were observed by scanning electron microscope (Hitachi S-3000, Japan).

Result

It was observed that pretreatment with 98% H₂SO₄ affected surface morphology of seed coat of *C. soldanella* by scanning electron microscope (SEM). It showed that protective layer of seed coat was removed and surface of seed coat was cracked by soaking in 98% H₂SO₄.

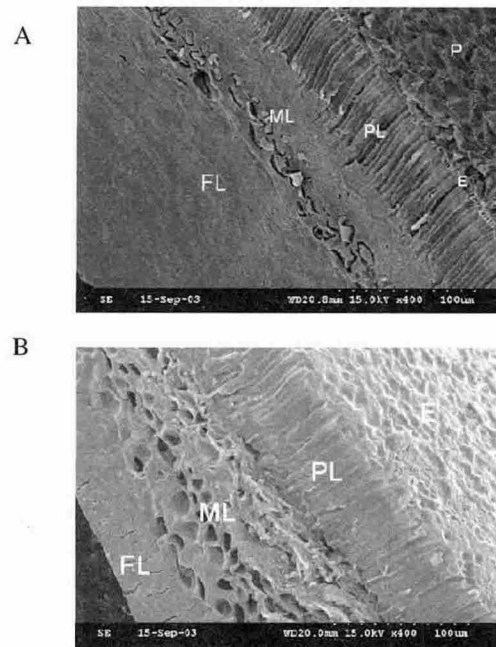


Fig. 1. SEM micrographs of non-pretreated (A) and H₂SO₄ pretreated (B) seed coats