

04-3-12

Seed Germination of *Carex kobomugi* via Acid and GA₃ Treatment

Jung-moon Ko*, Byeong-Mee Min² and Hyeon-Cheol Cha¹

¹Department of Biology, Dankook University, Cheonan, 330-714, Korea ;

²Department of Science Education, Dankook University, Seoul, 140-210, Korea

Objectives

The *Carex Kobomugi*, a sand-dune plant belong to Cyperaceae, has a poor germination less than 1 % in natural condition. We have investigated the effects of acid and phytohormone in order to enhance the germination ratio for mass propagation of this plant.

Materials and Methods

1. Materials

Explant - Seeds of *C. kobomugi*.

2. Methods

Three groups of seeds were divided and pretreated in 98 % H₂SO₄ less than 1 min. and washed through tap water. After pretreatment, one group of seeds were repeated once the above acid treatment (Exp 1). In second group, after pretreatment, seeds were immersed in GA₃ for 24 hrs (Exp 2). In third group, after Exp 1 treatment, seeds were immersed in GA₃ for 24 hrs (Exp 3). After these treatments, all seeds of three groups (Exp 1, Exp 2 and Exp 3) were then sowed on petri-dish with vermiculite and incubated in 25 °C under dark or light condition.

Results and Discussion

First of all, the result of Exp 1 did not show any germination under light/dark condition. In Exp 2, the germination ratio was enhanced by additional 1.0 or 5.0 mM GA₃ treatment in light condition upto 31 % in 2 weeks. But, short duration of 10 sec acid treatment showed no germination. Also, seeds which were incubated under dark condition in Exp 2 or Exp 3 did not show any germination in 2 weeks.

In Exp 3, short duration of 10 sec acid treatment with 0.5 mM GA₃ increased upto 23 % germination ratio in 2 weeks.

These results indicate that germination of *C. kobomugi* needs a chemical treatment to cause loosening seed coat followed by exogenous GA₃ application to promote the germination.

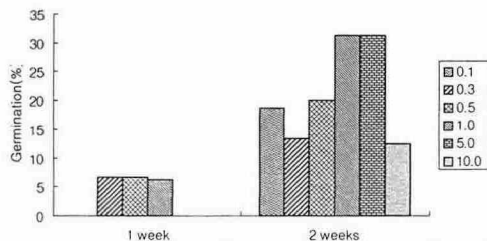


Fig. 1. germination after 30 sec acid treatment (Exp 2)

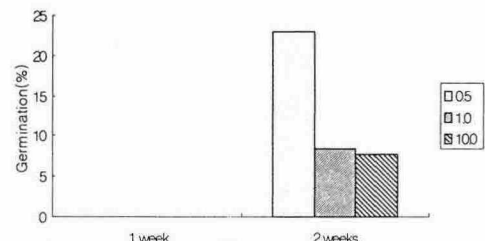


Fig. 2. germination after two 10 sec acid treatments (Exp 3)