

POLLEN GERMINATION
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This is a collection of methods gleaned from the plant-ed@net.bio.net listserv. Individual contributors should be contacted for more assistance. The statements are not reproduced verbatim.

1.

Prepare an aqueous solution of 12.5% sucrose, 0.01% boric acid, and 0.02% calcium chloride and sterilize by autoclaving. Dispense 0.5 ml into a depression well slide and add a ripe, dehiscent anther. Pollen tubes should grow out in 3-4 hours.

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Note added.

Tom Lee's recipe is taken from the publication: Brewbaker, J.L. and Kwack, B.H. 1963. The essential role of calcium ions in pollen germination and pollen tube growth. *Am. J. Botany* 50(9):859-865.

It is convenient to make up 4X-strength solutions of calcium chloride and boric acid, and a 2X-strength solution of sucrose. Combine the calcium chloride, boric acid and sucrose in the ratio 1:1:2 by volume. By using separate stock solutions, one of the components can be omitted and replaced with water, or a different substance can be substituted (e.g. glucose for sucrose).

2.

This is for a simple demonstration. Place a drop of 20% w/v sucrose on a slide. Add assorted pollen grains taken from plants in the area landscaping. Some actually germinate. Takes an hour or two to get visible growth.

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3.

Start with the SAPS web site at <<http://www-saps.plantsci.cam.ac.uk/>>. This gives a simple and reliable hanging drop technique using old film can lids. The technique was developed for use with rapid brassica pollen but it works equally well with other species. Many *Hyacinthus* spp. and relatives seem to grow exceptionally fast - try *Puschkinia*. Lillies and *Tradescantia* also grow well.

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4.

Here is a published source.

Hewitt et.al. 1985. Effect of brassinolide and other growth regulators on the germination and growth of pollen tubes of *Prunus avium* using a multiple hanging drop assay. *Aust. J. Plant Physiol.* 12:201-211.

Jenny Sasse

5.

For several recipes, try:

Kearns, C.A. and D.W. Inouye. 1993. *Techniques for Pollen Biologists*. University Press of Colorado, Niwot, CO., pp 101-106.

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