

pollen germination and a series of experiments were designed to investigate changing calcium concentrations on per cent germination.

Fresh "Seneca 60" pollen produced in the greenhouse was placed on drops of media in well-slides and allowed to germinate for 30 minutes. Densities were kept well above those which might reduce germination because of a "population effect" (see following note).

Sucrose and boron concentrations were held constant at the levels given above. The data were recorded and stored on film.

The addition of 1% methyl cellulose to the aqueous medium had no influence on per cent germination. Agar was not tried. Only a trace of germination was recorded at 50 ppm calcium and below. Optimum concentrations were in the range 300-400 ppm. Above 400 ppm the per cent germination slowly fell off but was still above 50% of optimum at 900 ppm. 100 ppm and 200 ppm gave 20-40% and 60-80% of optimum values, respectively.

F. S. Cook
D. B. Walden

6. The "population effect" in corn pollen germination.

Brewbaker and Kwack (1963) described a pollen population effect whenever pollen grains are germinated in vitro. Small populations germinate poorly or not at all under conditions which support good germination of larger populations. Although no population effect with corn pollen could be shown on the medium to which Noble agar had been added (MNL 39: 170), the effect was evident with small populations on the aqueous medium containing only 0.35 M sucrose, 100 ppm H_3BO_3 and 200 ppm $CaCl_2 \cdot 2H_2O$, i.e. sub-optimal concentrations of calcium.

Greenhouse-produced "Seneca 60" corn pollen was placed in wells of slides containing 20 μ l of the medium and allowed to germinate for 30 minutes. Numbers of grains and per cent germination were counted under a dissecting microscope. Germination in all experiments was compared with that of "high" populations.

Below 10 grains per 20 μ l there was only a trace of germination. At 100-150 grains per 20 μ l, per cent germination approached a maximum. These results are similar to those reported by Brewbaker and Kwack for the pollen of Saintpaulia, Haworthia and others.

F. S. Cook
D. B. Walden