

5. A temporary planting medium for determining pollen abortion percentages.

Percentages of normal and aborted pollen grains are frequently determined from temporary mounts of pollen from one or more anthers. Randomly selected areas of small size are usually counted because of the labor involved and for accuracy the distribution of the grains must be reasonably uniform.

Media commonly used for pollen abortion percentage counts have been water or 70 percent ethyl alcohol in which I_2 and KI were dissolved for staining purposes. Preparations made with water or alcohol are not wholly satisfactory since they dry out quickly and as the aborted pollen grains are lighter in weight than the normal grains they tend to be unevenly distributed. The use of high viscosity liquids has been suggested (Valleau). Pittenger and Frolik reported that the addition of 1 percent agar to the mounting medium aided in obtaining uniform dispersion. However, agar does not seem entirely satisfactory because it contains starches and stains with iodine. Glycerine seem to inhibit the absorption of stain by the starch in the pollen grains.

The addition of gelatin to an aqueous $I_2 + KI$ solution was found to provide the desired viscosity for uniform distribution of the normal and aborted pollen grains and to resist the drying of the preparations. The medium is prepared by adding about 2 grams of gelatin to a solution composed of 1 gram of KI and 1/4 gram of I_2 in 100 ml. of water. The mixture is then heated to dissolve the gelatin. This gelatin medium will solidify, but not very rapidly, at room temperature and warming once during a day is usually all that is necessary to keep the medium in the liquid phase. Unlike the agar method, it is not necessary to warm the slides before using them. A drop of medium is placed on the slide; an anther is placed in the drop and dissected to force out the pollen grains. After the debris has been removed, the drop is stirred to distribute the pollen grains and covered with a cover-slip. Usually it is unnecessary to apply pressure to obtain a uniformly thin film. The medium soon gels and the pollen grains are held in place. Unsealed mounts have not dried out after a full day's exposure to average laboratory atmosphere.

Calvin F. Konzak