

Measuring Stomatal Density using nail varnish

Using clear nail varnish is a traditional method to measure stomatal density, since making the impression and viewing it under a microscope can be completed quickly. However, some leaves are prone to damage from the solvent in the nail varnish. The leaves absorb it, turn brown, and fail to produce any impression

Materials

1. Clear or light coloured nail varnish
2. Glass slides
3. Clear tape

Method

1. Prepare an epidermal impression by coating the leaf surface with nail varnish.
2. Peel off the dried layer of nail varnish by using clear tape and stick this onto a slide.
3. Alternatively, with some plants you can peel off an epidermal strip directly, which you can mount in water on a slide and place under the microscope.
4. If you have an eyepiece graticule, you can work at a relatively low power, and you can count the number of stomata within different squares to act as replicates.
5. If you do not have an eyepiece graticule, you can work at a higher magnification and count a number of different fields - the area visible under the microscope - at any one time.