

B-32: Pollen development and presence of pseudopollen in tea (*Camellia sinensis*) anthers

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Tea (*Camellia sinensis*) flowers produce over 150 anthers depending on the genotype. The objective of this study was: to follow microsporogenesis and correlate the different stages with anther size and morphology and also to determine whether microsporogenesis is synchronised amongst the anthers in the same flower.

The anther has a prominent connective in which the presence of "pseudopollen" has been reported in the sub family Camellioideae. We report our attempts to identify such "false" pollen in *Camellia sinensis* using light microscopy.

Anthers of the genotypes DG7 and TRI 2025 were fixed in Farmer's solution and stored at 4°C for 12-24 h and stained by squashing in a drop of iodine in potassium iodide. Transverse sections were taken of the anthers to locate and identify the presence of psuedopollen.

The bud size ranged from 2.8 to 9.5mm. The mean number of anthers per bud was 246 for the genotype DG7 and 165 for TRI 2025. Microsporogenesis

however was synchronised amongst the large number of anthers and associated with colour changes of the anther wall: transparent-tetrad within microspore mother cell; white-tetrads and uninucleate microspores; pale yellow and yellow-uninucleate with exine and intine, nucleus migrating to the margin; dark yellow-binucleate pollen grains.

The anther lobes are separated by a broad connective. In the mature yellow anthers, cells in the connective adjacent to the sporangia became rounded with intercellular spaces. The differentiation of the connective cells by expansion led to a compression of cells adjoining these pseudopollen. These cells have undergone secondary thickening of their cell walls. There is evidence to suggest that these are pseudopollen.