Abstract

Male fertility of crop plants is a function of pollen production and viability. In breeding, it is a requirement that there be similar fertilities among breeding parents within seed orchards. An in-vitro germination method was used in this study to determine variation in pollen viability among eight tea (Camellia sinensis) genotypes, over three flowering seasons in four isolated biclonal seed orchards located at two sites. The effect of environmental conditions on pollen germination was also studied on two popular genotypes, i.e. AHP SC31/37 (an assamica variety) and GW Ejulu-L (a sinensis variety) that were planted in both sites. Significant variation ($P < 0.05$) in pollen viability among the eight genotypes indicated a potential for male gametophyte competition. There was significant genotype by environment interaction and positive correlation between pollen viability and temperature. Pollen germination was, however, not affected by rainfall and humidity. The variations in pollen viability may contribute to the variable genetic composition of seed produced in the isolated seed orchards of tea.