

## Abstract

To develop sound breeding strategies, it is necessary to understand the reproductive biology and breeding systems of a species. The consequences of inbreeding are particularly important as they influence the choice of progenitors, breeding population size and seed orchard design. Though the tea species (*Camellia sinensis* (L.) O. Kuntze) is thought to have evolved a pre-zygotic gametophytic self-incompatibility system to reduce the incidence of selfing, up to 20% selfing was determined in some Kenyan tea germplasm. Using the aniline blue fluorescence assay to study incompatibility, successful “self” pollen penetrations were observed, although most did not result in successful fruit set. This may indicate that tea has a late-acting self-incompatibility system (LSI) or an ovarian sterility (OS)-type of control of selfing. Data on fruit set indicated significant differences among the germplasm tested, indicating that self-fertility varies between tea genetic resources and that tea may best be regarded as a facultative out-breeder.