

Determination of the Number of Self-incompatibility Alleles (SIA) in *Coffea canephora* and the Role of Pollen-stylar Protein in the Expression of SIA

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SUMMARY

Four clones of *Coffea canephora* were utilized to determine the number of self-incompatibility alleles (SIA), and the role of pollen-stylar protein in the expression of SIA in the crop. The planting design was Fisher blocks, which five plants represent each clone. Spacing was 3.1 m by 3.1 m. Data were collected in three replicates. Fruit set data were subjected to diallel analysis; while the SIA was evaluated by stylar squash method and polyacrylamide gel electrophoresis. The self-compatibility index was 4.81, indicating that *C. canephora* is highly self-incompatible. Five self-incompatibility alleles: S₁, S₂, S₃, S₄ and S₅ were identified, thus a single gene with five alleles at its locus controls self-incompatibility in Nigerian *C. canephora* population. The protein band movement of the un-pollinated and cross-incompatible styles were restricted to the upper region of the gel (0.1-2.9 cm), while in cross-compatible combinations the thick bands were in both the upper and lower regions. Thus, the protein that is associated with the S-locus consists of those with low (lower region) and high molecular weights (upper region).