

# Population genetics of the potentially invasive African fruit fly species, *Ceratitis rosa* and *Ceratitis fasciventris* (Diptera: Tephritidae).

## Abstract:

A set of 10 microsatellite markers was used to survey the levels of genetic variability and to analyse the genetic aspects of the population dynamics of two potentially invasive pest fruit fly species, *Ceratitis rosa* and *C. fasciventris*, in Africa. The loci were derived from the closely related species, *C. capitata*. The degree of microsatellite polymorphism in *C. rosa* and *C. fasciventris* was extensive and comparable to that of *C. capitata*. In *C. rosa*, the evolution of microsatellite polymorphism in its distribution area reflects the colonization history of this species. The mainland populations are more polymorphic than the island populations. Low levels of differentiation were found within the Africa mainland area, while greater levels of differentiation affect the islands. *Ceratitis fasciventris* is a central-east African species. The microsatellite data over the Uganda/Kenya spatial scale suggest a recent expansion and possibly continuing gene flow within this area. The microsatellite variability data from *C. rosa* and *C. fasciventris*, together with those of *C. capitata*, support the hypothesis of an east African origin of the *Ceratitis* spp.