

and abiotic factors (eg. high winds). In *O. capensis* subsp. *capensis* up to 50% of the fruit crop falls prematurely for the same reasons. If reproductive success is judged from the fruit to flower ratio, both species are inefficient. The mechanisms operating in *Olea* may be twofold: The aborted flowers may be acting as pollinator attractants to enhance effective outcrossing, and secondly as pollen donors for effective wind pollination.

The fruit of *Olea* is a fleshy drupe with a large seed. The size varies from approximately 5 mm in *O. europaea* subsp. *africana* to 20 mm in *O. capensis* subsp. *macrocarpa*. The thickness of the pericarp (flesh) is thickest in the latter species. The colour sequence of fruit ripening strengthens the suspicion that birds may play an important role in the seed dispersal of all species. In the Knysna forests dense stands of *Olea* seedlings have been observed under perching trees. Large numbers of ingested seeds were also recovered from birds feeding on the fruits. Other agents of dispersal have also been recorded. Fruit fall under trees is high and terrestrial mammals favor the fruits. Water dispersal in some instances is also thought to play a role.

In all species the seed is surrounded by a thick, woody testa covering two papery cotyledons embedded in thick endosperm. The woody testa probably functions as protection for the embryo during the passage of the seed through the intestine of the dispersal agent, with the large endosperm providing reserves over long germination time (up to 18 months for *O. capensis* subsp. *macrocarpa*).

In a recent study of the genus in Africa it was shown that in southern Africa *Olea* has high levels of genetic diversity and is comparable to the genetic diversity found in other tree species. This diversity is greater within populations than between populations. These findings are concordant with findings in other outbreeding long-lived perennial woody species. The genetic distance between populations and between species is low and may indicate that the presently recognized species of *Olea* are recently evolved.

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