

## Association Analysis of Different Carpel Types Of Sesame [*Sesamum indicum* L.] on Length and Width of Capsules and Seed Number

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### Abstract

Genetic diversification based on morphological attributes in sesame grown in Jaffna district was critically examined in this study. "Descriptors for sesame" released by IPGRI and NBPGR was used as a guide to study about quantitative and qualitative characters. Moreover, an attempt was made to determine capsule length, width and seed number influence on yield of the sesame as well as to decide the ideal carpel type for sesame to select for breeding purpose. The experiments were conducted using RCBD with four replicates. Six types of capsules were identified and used for the study namely two carpelled (2 c), 3 c, 4 c, 5 c, 6 c. The results showed that width of capsule increased with carpel number while length of capsule decreased. Seed number was negatively correlated ( $r=-0.666$ ), ( $p=0.0013$ ) with length of capsule, positively correlated ( $r=0.783$ ), ( $p<0.0001$ ) with width of capsule and positively correlated ( $r=0.695$ ), ( $p=0.0007$ ) with locule number. Five carpel cultivars and six carpel cultivars have not been reported yet in India or in Sri Lanka, but one promising line has 8,10 and 12 locules as a mix in one plant but still segregating. To stabilize high locule numbers in sesame further work is needed to be carried out, that would be suitable for high productivity. Sesame cultivars with specific desirable characters were identified in this study to utilize for the development of high yielding cultivars in future.