



Research Paper

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Effect of corm size and spacing on growth, flowering and yield attributes of gladiolus

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ABSTRACT : The effect of corm size and spacing was studied on the growth, flowering and yield attributes of gladiolus cv. White Prosperity using the combination of five corm sizes (5g, 10g, 15g, 20g and 25g) and three spacing's (10 x 20 cm, 15 x 20cm and 20 x 20cm). Corm size and spacing had significantly influence on all the parameters studied. Large corm size (25g) took shortest time to complete 80% emergence (14.58 days), early inflorescence initiation (59.90 days), tallest plant (98.49 cm), highest length of flower stalk (70.72 cm) and rachis (23.82 cm), more no. of corms (3.12/plant) and cormels (47.23/plant), highest weight of corms and cormels (46.93 g/plant) and highest yield of corms (5.34 kg/m²). In case of spacing, the closer spacing (10 x 20 cm) took the shortest time to 80% emergence of plant (24.97 days), early 1st inflorescence initiation (63.51 days) and highest yield of corms (4.37 kg/m²). However, wider spacing (20 x 20 cm) was recorded the tallest plant (90.69 cm), highest length of flower stalk (62.75 cm) and rachis (19.43 cm), more no. of corms (2.86/plant) and cormels (40.86/plant), highest weight of corms and cormels (42.73 g/plant). The treatment combination D₃S₃ was recorded the tallest plant (105.35 cm), highest length of flower stalk (77.90 cm) and rachis (25.75 cm), more no. of corms (3.43/plant) and cormels (50.55/plant), highest weight of corms and cormels (52.44 g/plant) and highest yield of corms (5.21 kg/m²); whereas, the treatment combination D₁S₃ took the shortest time to 80% emergence (13.25 days) and inflorescence initiation (57.28 days).

KEY WORDS : Gladiolus, Corm size, Spacing, Flowering, Yield

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Gladiolus (*Gladiolus grandiflorus*) is a herbaceous annual flower, popularly known as "Sword Lily" is an ornamental cormelous plant native to South Africa. It belongs to monocot family Iridaceae, having approximately one hundred and fifty known species. This plant is commercially used for cut flowers and occasionally used for landscape purpose. Gladiolus produces very attractive flowers and there is great consumer demand for it. To satisfy customer demand, it is important that gladiolus flower is available round the year. Gladiolus is one of the few plants which produce pleasant cut flowers with long spikes. These spikes are an integral part of almost every cut flower arrangement ranging from table decoration to bucket formation. Gladiolus is cultivated in most of the tropical and subtropical countries of the world.

One mother corm generally produces one daughter corm of standard size and few cormels. These cormels are auxiliary

buds on the corm which is a compressed thickened stem and as the resting peruating organ. The cormels require two to three seasons to produce standard flower spike and daughter corm. However, this commercial production of corms and cormels doesn't fulfill the local demand of planting material and eventually affects corm cost.

Different factor such as size of corms, spacing, planting depth, planting time and fertilizer management influence the production and quality of gladiolus flower (Arora and Khanna, 1990). Among these, size of corm and spacing are very important. Size of corm influences the production of gladiolus. Large corms produced more flowers, corms and cormels than others (Misra *et al.*, 1985). There is a direct relation between corm size, flower production and corm and cormel yield as reported by Ogele *et al.* (1995). It is, therefore, essential to find out the best corm size, spacing and its combination in order to standardize conventional propagation methods for getting