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Influence of growing degree days (GDD) on flowering and fruit set of some commercial mango varieties under varying climatic conditions

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ABSTRACT : The present study was carried out at Department of Horticulture, Junagadh Agricultural University, Junagadh under south Saurashtra agroclimatic conditions during year 2012-13 and 2013-14. The treatments comprised of three locations *viz.*, Junagadh (L₁), Talala (L₂) and Dhari (L₃) and three commercially important mango varieties *viz.*, Kesar (V₁), Alphonso (V₂) and Rajapuri (V₃). The experiment was laid out in Randomized Block Design with Factorial concept (FRBD) and replicated four times. Significantly minimum days for bud differentiation (166.46 days with 1402.94 GDD) were observed at Talala location. Early flower initiation (73.04 days with 420.36 GDD) and short flowering span (60.42 days with 444.69 GDD) was observed at Talala location. Among varieties, early flower initiation (75.83 days and 381.04 GDD) and compact flowering span (60.63 days with 382.84 GDD) was observed in Kesar. Minimum days for fruit set (24.33 with 131.61 GDD), pea stage (20.63 with 173.10 GDD), marble stage (42.96 days and 446.48 GDD), egg stage (69.17 days and 809.13 GDD) and maturity (93.75 days with 1272.06 GDD) were required at Talala, while early fruit set (24.00 with 100.63 GDD), pea stage (20.83 with 144.47 GDD), marble stage (43.67 days and 361.66 GDD), egg stage (70.54 days and 694.79 GDD) and maturity (95.88 days and 1062.71 GDD) was noted in Kesar. The highest fruit set at pea (13.84%), marble (1.57%), egg stage (0.31%) and fruit retention (1.39%) were recorded at Talala. Among varieties, maximum fruit set at pea stage (13.84%) was recorded in Alphonso; on the contrary, it was maximum at marble (1.60%), egg stage (0.32%) and fruit retention (1.32%) in Kesar. Maximum numbers of fruits per tree were recorded at Talala location (335.21) and Alphonso variety (344.33).

KEY WORDS : Flowering, Fruit set, GDD, Location, Mango, Maturity, Stages, Variety

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