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Full Length Research Paper

Determining the chilling requirements of four Pistachio cultivars in Semnan province (Iran)

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Abstract

Most deciduous trees enter dormancy in respect to the shortening day length in fall; dormant buds re-quire a period of chilling to break this rest. The present research was carried out under laboratory conditions in order to determine the chilling requirements of 4 local cultivars of Damghan city. In this experiment some traits of flower bud breaking of mentioned cultivars in different chilling times (500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, and 1400 h) were studied. So an experiment as factorial in completely randomized design established in two levels of cultivar and chilling. Results indicated that the chilling requirements of Akbari cultivar were higher than others. This was due to genetic differences among cultivars. Due to the direct effect of the chilling amount during blooming period from the very entering time of the buds to the greenhouse a measure known as the Chilling Requirement Index (CRI) was used. This index seemed to calculate the chilling effects more accurately. Chilling requirements were estimated to be 1100 h for Khanjari, Shahpasand, and Abasali cultivars and 1200 h for Akbari cultivar respectively. However, chilling more than the above amount was found to be effective on re-duction of the bud blooming time.

Key words: Abasali cultivar, Akbari cultivar, chilling requirement, Khanjari cultivar, Pistachio, Shahpasand cultivar.

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