عنوان مقاله:

Persian Walnut Phenology: Effect of Chilling and Heat Requirements on Budbreak and Flowering Date

محل انتشار:

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نویسندگان:

Amin Hassankhah - *Department of Horticulture, Aburaihan Campus, University of Tehran, Pakdasht, Iran*

Kourosh Vahdati - *Department of Horticulture, Aburaihan Campus, University of Tehran, Pakdasht, Iran*

Majid Rahemi - *Department of Horticultural Sciences, Faculty of Agriculture, Shiraz University, Shiraz, Iran*

Darab Hassani - *Horticultural Science Research Institute (HSRI), Karaj, Iran*

خلاصه مقاله:

Walnut production is limited by late-spring frost in many countries. The current research was carried out to evaluate chilling and heat requirement of catkin and terminal buds break on six selected superior walnut genotypes and cultivars (‘C-25’, ‘88-1’, ‘88-2’, ‘Chandler’, ‘Jamal’ and ‘Damavand’). The Utah and accumulation growing degree hours (GDH) models were applied to determine the chilling and heat requirements under field and greenhouse conditions, respectively. ‘Damavand’ cultivar (650 CU) and ‘C-25’ genotype (650-800 CU) had the lowest chilling requirement for terminal bud break. ‘Jamal’ cultivar and ‘C-25’ genotypes had the lowest chilling requirement to break the dormancy of catkins (650–800 CU). ‘Chandler’ cultivar and ‘88-1’ and ‘88-2’ genotypes as late-leafing genotypes/cultivars had the highest chilling and heat requirements to break dormancy of terminal buds (800-1100 CU and 11832-12648 GDH) and catkin (800-950 CU and 11484-12180 GDH). In conclusion, late-leafing genotypes/cultivars had the higher heat requirement than early-leafing genotypes/cultivars. Based on the results, a linear and significant relation was observed between chilling requirement and heat accumulation. Therefore, heat accumulation of buds and catkins was reduced by increase in the amount of chilling requirement. Furthermore, the result revealed that heat accumulation is more important than chilling requirements to estimate walnut budbreak date. The GDH of catkins and terminal buds .was decreased with increase in the average temperature during heat accumulation

کلمات کلیدی:

Late-leafing cultivars, Utah model, Juglans regia, GDH model, linear regression