Proc. Interamer. Soc. Trop. Hort. 38:127-132. 1994.

Blooming Time Differences Among Seedling Peach Clones

Jorge A. Zegbe-Domínguez and Agustín F. Rumayor-Rodríguez, *Instituto Nacional de Investigaciones Forestales y Agropecuarias-Campo Experimental Calera, Apartado Postal No. 18, Calera, Zac., 98500, México.*

ABSTRACT. Fourteen outstanding clones of local seedling peaches were studied in relation to their blooming time. The cultivar 'Sam Houston' served as the control. Bloom length in julian days of six phenological stages (from bud swell to the end of blooming), and estimated heat requirements (growing degree hours) to reach each stage were used. Based on three years of field observations, differences in blooming were detected among genotypes, where S66 and 'Sam Houston' had the earliest date of full bloom (March 6th and 12th, respectively); while S134 was the latest blooming clone (April 4th). Important differences in heat requirements to reach full bloom between genotypes and years were also observed, suggesting that late blooming in our local seedling peaches may be due to different heat requirements during ecodormancy.

RESUMEN. Catorce genotipos sobresalientes de duraznero criollo y 'Sam Houston' como testigo, fueron estudiados en relación a su período de floración, usando la longitud de floración en días julianos en seis estadíos fenológicos (desde yema hinchada hasta el fin de la floración), y estimando los requerimientos térmicos (unidades calor) para cada estadío fenológico. Con Base en tres años de observación de campo, diferencias estadísticas significativas ($P = 0.05$) fueron detectadas entre genotipos, donde la selección S66 y 'Sam Houston' presentaron la floración más temprana (6 y 12 de marzo, respectivamente) y la selección S134 la más tardía (4 de abril). También, se observaron diferencias importantes en los requerimientos de calor entre genotipos y años, sugiriendo que la floración tardía en nuestro durazno criollo es debida a las diferencias en la cantidad de calor durante ecoletargo.

Peach growing in Zacatecas, México is an important activity, where approximately 25,000 ha are grown. These orchards have been almost exclusively established by seed for the last 50 years. Fruit type resembles a clingstone peach with a sweet, firm and yellow flesh that makes fruit suitable for the regional fresh market and industry. Due to the propagation method used, differences up to 40 days in blooming dates among individual trees within an orchard may be noted. In addition, a wide variation of fruit production in this region from season to season is common, particularly due to spring frosts which can cause blossom damage to early blooming genotypes. Frequent reductions in production does not allow growers to provide a consistent quantity of product to the industry and fresh market. Therefore, the selection of local seedling clones, along with the introduction and development of new genotypes, may be an approach to minimize spring frost injury by switching to late-blooming cultivars.

Late blooming of deciduous fruit trees has been associated with the length of winter chilling requirements to overcome the endodormant period, and the heat requirements in the ecodormant phase needed to initiate bud break in spring (Gianfagna and Mehlenbacher, 1985). Genotypes with high chilling requirements can not be grown in mild winter climates without observing several symptoms, such as delayed foliation and poor fruit set, associated with the lack of chilling (Erez, 1987); however, cultivars with bloom delayed due to a high heat requirements in the ecodormant phase would be useful in diverse environments (Gianfagna and Mehlenbacher, 1985).

The objective of this study was to evaluate local seedling peach clones according to their bloom dates, blooming time and heat requirements for blooming.

Materials and Methods

The experimental orchard was established in 1987 at "Campo Experimental Calera", 22°54'34" north latitude and 102°39'33" west longitude. The site is at