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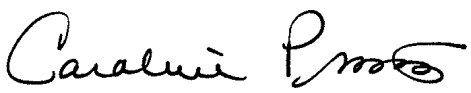

Pollination of St.Pepin to increase grape yield under growing conditions in Québec, Canada.

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St.Pepin is a versatile common hybrid grape variety with high oenological potential grown in Quebec, Canada. St. Pepin is characterized by good winter hardiness, low disease susceptibility, and high oenological potential, having desirable aroma, flavor acidity and sugar content, with no foxiness flavor. However, this variety possesses imperfect flowers and necessitates another variety for pollination. In Québec, St.Pepin grape production is inconstant and compatibility with others hybrid varieties for pollination is unknown. The objectives of this study were: 1) to evaluate compatibility of hybrids varieties for pollination of St.Pepin; and 2) to determine hybrid grape varieties with better pollination potential for St.Pepin. An experimental design including ten treatments, that consisted of an artificial pollination with eight hybrid varieties (Acadie, Adalmiina, Frontenac blanc, Frontenac gris, La Crescent, Louise Swenson, Osceola Muscat, Seyval blanc), positive control (pollination with St. Pepin), and standard control (no pollination), was implemented in the experimental vineyard of Oka (CRAM, Quebec, Canada). The clusters were protected from external pollination with nets and manual pollination was done according to varieties flowering. Results showed that flowering period of Acadie, Adalmiina, Seyval blanc and Louise Swenson were more synchronized with St.Pepin flowering. Observation of cluster development reveals that all varieties had fecundated St.Pepin flowers, and none or only few grapes were noted for the two control treatments. Cluster development was higher when St. Pepin was pollinated with Seyval blanc, Adalmiina, Osceola Muscat, and La Crescent. We also observed lower coulure and millerandage with these varieties. At harvest, cluster weight, number of berries by cluster, and berry weight were higher with Seyval blanc, Adalmiina, and La Crescent. Little changes were observed between treatments for juice chemical parameters (pH, solid solubles, titrable acidity). Pollination of St. Pepin with others hybrid varieties is discussed to improve its production under cold climate conditions of Quebec, Canada.