

## Assessment Model for Scion/Rootstock Interaction in Cherry Compatibility

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### SUMMARY

Breeding process of cherry rootstocks aims to obtain a large spectrum of vigour, which new rootstocks give to trees by grafting. The interactions of rootstock to varieties and expression of their compatibility are complicated, but essential in choosing the best combination variety / rootstock (Hrotkó, 2004; Sitarek, 2006). Making a database support for optimal graft combinations and designation of the most valuable biotypes in terms of agro-productivity potential is a step forward in achieving sustainable fruit systems. Therefore, the main objective was to emphasize new elements of the compatibility and incompatibility at cherry such as forms, manifestation, early expressions related to the morphological and metabolic changes. The tested rootstocks were interspecific hybrids as follows: *Prunus subhirtella* x *Prunus canescens*, *Prunus pseudocerasus* x *Prunus incisa*, *Prunus incisa* x *Prunus subhirtella* and *Prunus subhirtella* x *Prunus pseudocerasus*. Sweet cherry varieties used as scions were 'Van', 'Van C', 'Starking', 'Nero 2', 'Nero 3' and 'Durone di Batza'. In the nursery field, it was observed a lot of interesting scion/rootstock interactions, which we concentrate them in models for cherry incompatibility. Earliest form of incompatibility is evidenced in the bud stage, when the scion began expanding, but in the end is withering and it drops. Another manifestation of incompatibility is the one when the bud is expanding, is opening, but the rootstock eject the scion in that condition. In a different phenologic phase the incompatibility symptoms starts after three weeks when the leaves are opened but a senescence metabolic process interpose and it is distinguished by chlorotic yellowed leaves which premature drops. In the next phenological stage, incompatibility is manifested by a very slow rhythm of scion growing. At the end of vegetation, the shoot stays in the spur type. In any development stage of the scion, a very negative influence of the rootstock may appear more or less intense by eluding tendency of the scion shoot or branch. Also in many cases, the scion is detached and the mechanical resistance of the grafted plant is compromised. In conclusion, many of the incompatibility forms are localized in the grafting zone and are morphological emphasized.

**Keywords:** cherry, affinity, symptoms

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