A Technology for the destemming and fractionation of hand-picked grape

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**Abstract.**

The patented solution is based on the inhomogeneity of the grapes entering the winemaking process. This inhomogeneity is found at the level of the average mass of the berries and the relative forces of detachment from the stalk. Therefore, there is a relationship between impressed accelerations and the quantity of berries that detach from the stalk during the destemming operation. It is known that the grape mass increase as a function of the accumulation of sugars, therefore more mature berries contain greater quantities of sugar and have greater masses. At the same time, the detachment force of the berries decreases during ripening because of the normal physiological mechanism that determines the collapse of the cellular structures of the pedicel that connect the berries to the stalk.

The extreme variability of grape ripening is also well-known, both within the same vineyard, a spatial variability, and between contiguous plants, between clusters on the same plant, up to the different level of ripeness that the berries show inside of the single bunch. Based on what has been mentioned above about the link between the ripening state of the berries, mass, and detachment force.

The object of the invention is a system for separating the berries from the bunch, through applying mechanical energy of increasing intensity, in such a way as to be able to divide the mass into at least two portions of berries characterized by different level of ripeness.

This invention aims to obtain, through the separation of the berries, the production (at least two) different musts, starting from the same mass of grapes hand-picked. This operation could be extremely useful for wineries, to manage the quality level of the future blend and to aim the desired oenological targets.