Influence of the production process of strawberry industrial purees on free and glycosidically bound aroma compounds

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A portion of the odourless fraction of fruits bound to sugars releases aromatic substances that represent an important source of aromatic potential. During the processing of fruits, these compounds may be affected. Thus, in this work, for the first time, glycosidic aroma precursors were studied over the course of the industrial production process of commercial strawberry puree. Free volatile compounds were also studied. The results indicated that the amounts of free and bound aromatic compounds decreased, particularly in the free fraction, by more than 50% of the total amounts. The pasteurisation stage led to the greatest loss of the precursors of key strawberry odorants. However, the seed removal step offset these losses during the processing of glycosidically bound aroma compounds. The free volatile compounds that were most strongly affected were the higher alcohols and ethyl esters. This study suggests that the amounts of glycosidic aroma precursors in the raw material significantly affect the aromatic potentials of commercial purees. Industrial relevance In producing country strawberries, every year, part of this crop is discarded due to several reasons like size, deformations or even overproduction, which cause surpluses. These strawberries of second quality are suitable for human consumption. So, these are used to obtain different products such as purees. These purees are provided to other industries that use it as an ingredient in the production of fruit-based commodities. In these products the aroma and aromatic potential which is due to the content of odourless aroma precursors are important. So, to conserve and to enhance aromatic potential are necessary to know how the industrial production process of commercial strawberry puree affects aroma precursors and volatile compounds. To the best of our

knowledge, the effect of fruit processing on these odourless aroma precursors has not yet been studied. We consider that the results of this study are relevant to improve the product quality and economic benefits in the industry that develops products from strawberry.

Fruit processing

Glycosidic aroma precursor

Strawberry

Volatile compound

Aromatic compounds

Aromatization

Economics

Odors

Technology transfer

Volatile organic compounds

Aromatic substances

Bound aroma compounds

Fruit processing

Glycosidic aroma precursor

Industrial production

Production process

Strawberry

Volatile compounds

Fruits

Fragaria x ananassa