

CORRESPONDENCE/REBUTTAL

Comment on Volatile Components from Mango
(*Mangifera indica* L.) Cultivars

Sir: In a paper dealing with the analysis of volatile components from mango cultivars (1), a group of scientists has reported an impressive list of compounds identified by a combination of GC-MS data and chromatographic retention indices. However, careful examination of Table 1 reveals that a number of the identified components cannot reasonably be considered as naturally present in the tested fruit. Among these, ethylmaltol and allyl cyclohexylpropionate are typically indicative of exogenous contamination, in taking for granted that the identifications are correct because they comply with IOFI recommendations (2). Both compounds are widely used as synthetic ingredients in the flavor and fragrance industry and have not been reported so far in nature. Given the well-established formation pathway of maltol from hexoses, the genesis of ethylmaltol would require an unlikely C-7 carbohydrate, which therefore rules out the natural character of the latter. The putative biogenesis of allyl cyclohexylpropionate raises similar objections.

The same issue can be addressed with the reported “2-methyl- β -ionone”, albeit the position of the extra methyl group is still unclear, depending on the nomenclature. The only natural methylated ionones known are irones, which result from the oxidative degradation of C-31 triterpenic precursors occurring in some Iridaceae species. Again, this identification suggests contamination with some isomer of methylionone, a synthetic ingredient commonly used in fragrance compounding. Further suspicion of contamination with fragrance materials is supported by the identification—inter alia—of “(Z)-jasminaldehyde”, better known as α -amylcinnamic aldehyde.

Careless reporting of such compounds as natural products can generate regulatory issues in countries where the labeling of natural flavors precludes the use of artificial ingredients, *until they are reported as natural*. This may also cast doubt on the whole analytical work, because one may then question the relevance of all claimed identifications.

In summary, when reporting the identification of hitherto artificial products in a natural blend, authors should evaluate the likelihood of their formation pathway from any reasonable precursor, as suggested in a recent rebuttal correspondence to this journal (3). Because one would expect that such a recommendation is applied by manuscript referees, this would incite authors to critically reexamine the relevance of data they use for proposing new identifications.

LITERATURE CITED

- (1) Pino, J. A.; Mesa, J.; Munoz, Y.; Marti, M. P.; Marbot, R. Volatile components from mango (*Mangifera indica* L.) cultivars. *J. Agric. Food Chem.* 2005, 53, 2213–2223.
- (2) Editorial. *J. Agric. Food Chem.* 1996, 44, 2941.
- (3) Davoli, P.; Bellesia, F.; Pinetti, A. *J. Agric. Food Chem.* 2003, 51, 4483.

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Daniel Joulain
Research Division, Robertet S.A., B.P. 52100,
06131 Grasse Cedex, France

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