

to be optimised for flow properties and sensory impressions. Volatile release data suggested that chocolates of higher fat content would exhibit greater release of components with cocoa notes and less release of volatiles with caramel-like and honey notes than those with lower fat. Factors such as lipophilicity or lipophobicity of flavour compounds could modulate the effect of fat content on release (Afoakwa *et al.*, 2009). Within the cocoa mass, flavour volatiles are in one part entrapped within cocoa particles where they had been generated during fermentation and roasting and, in the other part, bound to particle surfaces or dissolved in cocoa butter. Hydrophobic flavour substances such as tetramethylpyrazine or linalool are to a greater extent dissolved in the fat, while the hydrophilic ones like 3-methylbutanal or phenylacetaldehyde are mainly fixed in the solid matrix. So, only a part of the flavour volatiles may be perceived in cocoa mass. During conching of chocolate masses, flavour volatiles are increasingly set free from cocoa and transferred to sugar surfaces. So, the conching process brings the optimal flavour distribution within the chocolate masse, necessary for the desired flavour release and uniform aroma perception (Ziegler *et al.*, 2003, 2005; Danzl and Ziegler, 2014a). Due to the growing coating with fat and flavouring materials, the intense sweetness of sugar particles is reduced. When we eat chocolate, the cocoa butter slowly melts and the sugar dissolves, so that the flavour volatiles are fully released. When enjoying finished chocolate, one does not recognise “cocoa” and “sugar”, but has the overall impression of “chocolate”.

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