

Volatile constituents of roasted tigernut oil (*Cyperus esculentus* L.).

ABSTRACT

BACKGROUND: Volatile compounds play a key role in determining the sensory appreciation of vegetable oils. In this study a systematic evaluation of odorants responsible for the characteristic flavour of roasted tigernut oil was carried out. **RESULTS:** A total of 75 odour-active volatiles were identified. From these, 13 aroma compounds showing high flavour dilution factors in the range of 16 to 128 were quantified by their odour activity values (OAVs). On the basis of high OAVs in oil, the following aroma compounds [vanillin (chocolate, sweet vanilla), 5-ethylfurfural (caramel, spicy), 2,3-dihydro-3,5-dihydroxy-6-methyl-4H-pyran-4-one (caramel), phenyl acetaldehyde (honey-like), ethanone, 1-(4-hydroxy-3-methoxyphenyl) (faint vanilla)] were elucidated as important contributors to the overall chocolate, sweet vanilla, butterscotch aroma of the oil. **CONCLUSION:** Odorants with high concentrations in the roasted tigernut oil such as 5-hydroxymethylfurfural, ethyl hexadecanoate, n-propyl-9,12-octadecadienoate gave relatively low OAVs, so their contributions to the overall orthonasal aroma impression of roasted tigernut oil can be assumed to be low. © 2012 Society of Chemical Industry.

Keyword: Roasted tigernut oil; Volatile compounds; HS-SPME/GC-MS; Odour activity values.