

Comparison of enzymatic and acid hydrolysis of bound flavor compounds in model system and grapes.

Autorzy

Mariusz Dziadas

Henryk H. Jeleń

Rok wydania

2016

Czasopismo

Food Chemistry

Numer woluminu

190

Strony

412-418

DOI

10.1016/j.foodchem.2015.05.089

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Four synthesized terpenyl- β -D-glycopyranosides (geranyl, neryl, citronellyl, myrtenyl) were subjected to enzymatic (AR 2000, pH 5.5) and acid (citric buffer, pH 2.5) hydrolysis. Decrease of glycosides was measured by HPLC and the volatiles released--by comprehensive gas chromatography-mass spectrometry (GC $\times$ GC-ToF-MS). Enzymatic hydrolysis performed for 21 h yielded 100% degree of hydrolysis for all glycosides but citronellyl (97%). Degree of acid hydrolysis was highly dependent on type of aglycone and the conditions. The highest degree was achieved for geraniol, followed by citronellol and nerol. Myrtenyl- β -D-glycopyranoside was the most resistant glycoside to hydrolysis. Acid hydrolysis degree was also related to temperature/time combination, the highest being for 100 °C and 2 h. In a result of enzymatic hydrolysis 85-91% of total peak areas was terpene aglycone, whereas for acid hydrolysis the area of released terpene aglycone did not exceed 1.3% of total peak area indicating almost complete decomposition/transformation of terpenyl aglycone.

Słowa kluczowe

Grape, Wine, Terpenyl- β -d-glycopyranosides, Bound flavor compounds

Adres publiczny

<http://dx.doi.org/10.1016/j.foodchem.2015.05.089>

Strona internetowa wydawcy

<http://www.elsevier.com>