

Table of Contents

In Press

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Article Archive

CJFS (36) 2018

CJFS (35) 2017

CJFS (34) 2016

CJFS (33) 2015

Issue No. 1 (1-96)

Issue No. 2 (97-194)

Issue No. 3 (195-294)

Issue No. 4 (295-397)

Issue No. 5 (399-485)

Issue No. 6 (487-579)

CJFS (32) 2014

CJFS (31) 2013

CJFS (30) 2012

CJFS (29) 2011

CJFS (28) 2010

CJFS (27) 2009

CJFS (26) 2008

CJFS (25) 2007

CJFS (24) 2006

CJFS (23) 2005

CJFS (22) 2004

CJFS (21) 2003

CJFS (20) 2002

CJFS (19) 2001

CJFS (18) 2000

CJFS (17) 1999

Editorial Board

Ethical Standards

For Authors

Author Declaration

Instruction for Authors

Submission Templates

Guide for Authors

Copyright Statement

Fees

Submission/Login

For Reviewers

Characterisation of hop varieties grown in Romania based on their contents of bitter acids by HPLC in combination with chemometrics approach

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Reverse-phase high performance liquid chromatography technique was used for studying the evolution of bitter acids from three varieties of hop growing in Romania during the development of hop cones and the pelletisation process in order to provide the information on the bitter acids profile of each cultivar. Chemometrics methods were applied for highlighting the statistical correlations existing between the genotype (variety), chemotype (composition), and phenotype (phenophase of cone development) with respect to the classes of biologically active compounds investigated (bitter acids). The bitter acid content of each hop cultivar was not only significantly dependent on the phenophases of the cones, but was also influenced by the harvest year. The variations in the α/β ratio as well as cohumulone and colupulone contents were low in both experimental years and the cohumulone/ $\Sigma\alpha$ did fraction not exceed 30% in any of the three varieties.

Keywords:

α -acids; β -acids; Romanian hop cultivars; *Humulus lupulus*; principal component analysis

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