

Emerging Contaminants and Associated Treatment Technologies

Biljana Balabanova
Trajce Staflov *Editors*

Contaminant Levels and Ecological Effects

Understanding and Predicting with
Chemometric Methods

 Springer

Emerging Contaminants and Associated Treatment Technologies

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Chapter 10

Chemometric Determination of Macro- and Microelements in Barley Genotypes with Different Origin Grown in the Republic of North Macedonia



Natalija Markova Ruzdik, Verica Ilieva, Ljupcho Mihajlov, Sonja Ivanovska, Sasa Mitrev, Darina Vulcheva, Dragomir Vulchev, Biljana Kovacevik, and Mite Ilievski

Abstract The main aim of this research was to determine the content of macro- and microelements in barley genotypes, with different origin and spike morphology grown under agroecological conditions in the Republic of North Macedonia. The field experiments were conducted during 2012/2013 and 2013/2014 on the research fields of the Faculty of Agriculture, “Goce Delchev” University, in Ovče Pole. The trials were arranged as randomized complete block design with three replications for each genotype. 30 winter barley genotypes with different origin were used as an experimental material. Five of them are domestic (Hit, Izvor, Egej, Line 1, and Line 2), two varieties are from Croatia (Zlatko and Rex), five genotypes have Serbian origin (NS 525, NS 565, NS 589, Somborac, and Javor), four genotypes are from Hungary (Kompolti korai, Petra, GK Stramm, and GK Judy), two genotypes have Romanian origin (Liliana and Unifers), and the remaining are from Bulgaria (Obzor, Perun, Emon, Lardeya, Orfej, Imeon, Zagorec, Asparuh, Kuber, Sajra, Devinija and Odisej). From all tested barley varieties, six cultivars have six-row spike morphol-

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