

Title Malt quality during the post-harvest maturation of barley
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Abstract

The relation of dormancy to qualitative characteristics of malt and physiological condition of malting barley kernels was followed immediately after the harvest and in intervals of three and six weeks after the harvest. Ethylene, ethane, and carbon dioxide production as well as oxygen consumption during the period of malt production was studied in six varieties of malting barley (Bojos, Jersey, Malz, Prestige, Sebastian, and Tolar). Alpha-amylase activity, beta-glucans concentration, malt homogeneity, malt modification, and yield of malting were determined in the produced malt. Using the method of statistical stepwise regression, significant dependences existing between ethylene production and yield of malting were found out. During the period of barley steeping and germination, production of ethylene is dependent on the content of beta-glucans and malt homogeneity and modification. At the beginning of germination, production of ethylene represents a highly significant indicator of alpha-amylase activity. Production of carbon dioxide is directly related to malt homogeneity and modification. The amount of consumed oxygen indicates indirectly the potential yield of the malting process and future malt modification even after the first steeping.