The Utilization of Conductometric Method for Determination of Quantitative Modifications of Hop Pellets Bitter Acids During the Storage

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SUMMARY

Hop (Humulus lupulus L.) is one of the basic raw materials employed in brewing. Compounds derived from hops have several effects on beer. The resinous compounds, alpha- and beta-acids give a bitter taste to beer, while essential oils are responsible for the hoppy aroma (1). The most important substances from the cones are without doubt the ones that give bitterness to the beer. „The bitter substances” from hop is an original name of the resins of hop and this technology is used for the extraction of some chemical compounds that are not defined as resins but can be isolated from these. Alpha-acids are the main bitterness substances of beer and are mainly humulone, cohumulone and adhumulone. The effects of storage temperature on the composition of hop pellets of the varieties Hüller Bitterer and Magnum were studied. All the hop pellets samples were stored at -20°C, but the losses in bitter acids content were different for each hop variety. The global content on alpha bitter acids was established by conductometry, the method being especially in order to establish the chemical quality of hop in view of commercialization. To study quantitative modifications of hop pellets bitter acids during the storage two sets of analysis were carried out: the first set of tests was performed on samples received in the Food Quality and Safety Laboratory and the second set of tests was performed on samples of hop pellets from variety Hüller Bitterer after 6 months, 3 months and 2 months from reception, and for variety Magnum after an interval of 5 months and 4 months from reception of samples.

The conductimetric determination of bitter acids is a routine analysis, but there are some limitations that should be taken in consideration (2):
- the determination gives only the global content of alpha bitter acids and not their composition
- the method cannot be applied to old hop, in this case the conductance value of bitter acids is bigger than the real one (the free acids resulting from the bitter acids oxidative process will be also titrated).

REFERENCES