Optimization of the sulfuration process of wine products with potassium metabasulife at all technological steps

Covaci ECATERINA, Rodica STURZA, Ivan PRIDA
Technical University of Moldova, Chisinau, Republic of Moldova

Abstract
Sulfitation of wine products is a routine process widely used in the wine industry at various stages of production and regulated by normative and technological documents of wine products production. Disposing of the needs and technological possibilities of industrial enterprises, sulfitation process of wine is carried out using sulfur dioxide as sulfur source: sulfuric acid, native sulfur, liquefied sulfur dioxide and salts of sulfuric acid (meta - and sulfites). The sulfitation process of wine products with the use of salts of sulfites - potassium sulfite ($K_2S_2O_5$, E 224) has gained a large spread not only in craft winemaking but also in large wineries. At the same time, the basic disadvantage of this process is the exogenous enrichment of wine products with potassium ions, and the reduction of mass concentration of total titratable acids, which leads to the risk of crystalline instability resulting from the precipitation of tartaric salts, limiting the range of use of this process at the first stages of the manufacture of the wine products.
Under laboratory conditions, a process for the sulfitation of wine products has been developed by reducing the risks of crystalline instability at all stages of their production, with the use of potassium sulfite solutions. The process provides a prior preparation of a mixture of 100 g/dm3 potassium sulfite solution and tartaric acid of 300 g/dm3 solution at rapport 2:1 (by volume) with intense stirring. The prepared solution, based on potassium sulfite and tartaric acid, is used for the sulfitation into wine products, after the pre-separation of the formed precipitate, at all stages of their production.

Keywords: Crystalline instability, Potassium sulfite, Wines, Sulfitation.