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## Formation and correction of organoleptic indices of ready sparkling wine by adding expedition liqueur

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Sparkling wine is a multi-component water-alcoholic system; the quality depends on the chemical composition, as in the process of oxidation-reduction reactions sensory-active compounds are formed, which are responsible for organoleptic indicators. Secondary fermentation is the production of hues, which give the wine its specific taste, aroma and colour. In the classic method of champagnization, the final stage in the formation of the organoleptic properties is the addition of expeditionary liqueur. A good number of studies have been reported in the scientific literature on the effect of expeditionary liqueur, but none of these studies summarises the positive effect of the catalytic effect of the dosage on the opening and prolongation of organoleptic properties. The aim of the article was to identify individual changes in organoleptic indices under the influence of dosage. The evidence supporting the role of expedition liquor in the formation of organoleptic indicators was identified and summarized and the main biochemical reactions taking place during dosage were described.

**Methodology and theoretical orientation:** Studies on the effect of expedition liqueur on organoleptic indicators of finished sparkling wine are analysed. The chemical composition of sparkling wine changes after the addition of the dosage due to the passing of the glucose-proline reaction of Maillard. It was found that this reaction results in the formation of many sensory-active compounds in particular. The key aromatic compounds contribute to the respective aroma due to the low concentration perception threshold. Cavitation desorption processes are related to proteins and amino acids. Proteins are responsible for foaming by exhibiting unfolding and adsorption capacity at the gas-liquid interface, while amino acids, in turn, increase the wine's viscosity through strong bonds. The addition of forwarding liqueur reduced the pressure by 3 atm, which pacified the wine and stabilized the "boiling" process, which is characterised by the interaction between the tensioactive components of the wine and the dissolved carbon dioxide molecules. The foaming of the control samples correlates directly with their chemical composition, which changes under the influence of the expedition liqueur. A study of the effect of experimental dosages of expeditionary liqueur on foaming ability revealed that the wine proteins associated with pathogenesis are degraded after the dosage has been applied. Chromaticity is the musical and color synesthesia by which a taster builds up an associative series when first encountering a sparkling wine. The so-called "crunching" sound, reproduced by the bursting bubbles on the surface of the sparkling wine poured into the glass, anticipates a chromatic reference of the color palette. The chromatic values of the test samples, into which the sulphated expedition liqueur was added, had changes of colour palette from soft pink to copper. The pink hues in these test samples are possible due to the binding of pigments with bisulphite. The chromatic values of the test samples, in which un sulphitised expeditionary liqueur was added, had a clear colour gradient from "frightened nymph thigh" to "acaju" colour. Without the addition of sulphiting agents, the colour palette changed uniformly and homogeneously.

**Conclusion:** On the basis of the analysis of the received data it is possible to claim, that by regulating the dosage of the expedition liqueur during the sparkling wine production it is possible to influence the initiation and course of the sugar-amine reaction of Maillard, which allows purposefully forming and correcting chromatic, frothy and sparkling wine parameters.

### Biography

Takahiro Imai, Senior Managing Director. He majored in mechanical engineering at Nagoya University in Japan and has expertise in thermodynamics and biomaterials engineering. After graduating, engaged in Food technology for packaged foods, including continuous sterilization systems, at a major general food manufacturer. Currently, he is in charge of designing and developing small retort sterilizers for a food manufacturing Venture Company.