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Ways of Must Treatment and its Effect on the Wine Quality **Peter CZAKO, Martina FIKSELOVA, Ján GAŽO, Martin MELLEN**

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The aim of our work was to evaluate the effect of different methods of must clarification on the wine quality of variety Pinot Gris, compared traditional and modern technologies. Clarification of must is important operation performed in winemaking, which can have a major impact on the future quality of the wine. It removes components that may negatively affect hygienic and sensory quality of the wine. Four variants of wine were prepared by different treatments of must: variant 1 : spontaneous fermentation without the addition of yeast, no clarification; variant 2 : must with static decanting for 12 hours, without adding clarifying preparations, with the addition of wine yeasts; variant 3: must clarified by the clarification preparation at a dose of 100 g. 100 l-1 of must, representing the maximum dose of the clarification preparation. The preparation was applied directly to the must. Yeasts were applied to the clarified must after the must turbidity. Variant 4: must clarified by the clarification preparation at a dose of 30 g. 100 l-1 must, with the addition of yeasts. Clarification consisted of preparation of highly pure cellulose, polyvinylpyrrolidone, gelatin and mineral adsorbents.

Basic chemical assessment of acid, alcohol and residual sugar contents were assessed in produced variants of wines and statistical testing was performed (Multifactor Analysis of Variance). Then overall sensory quality of wines was evaluated (100 - points system, and semantic differential) and the aromatic profile (profile method). Based on acquired results we compared which of the used technologies the most significantly affect observed parameters. Content of acids in wine variants ranged from 6.4 g.l-1 to 7.5 g.l-1. The highest acidity was found in the first variant (7.5 g. l-1), while the lowest acidity was found at the third variant. Acidity (6.7 g.l-1) was detected almost the same in the second and the fourth variant. The acid contents at all samples were detected in the optimal amounts. Statistical testing by the Tukey HSD test showed that two homogeneous groups were formed, statistically differed only the first variant. Alcohol content ranged from 11.8 % to 12.1 %. Variant 1 contained 11.83 % alcohol and the same alcohol content was detected at second variant. The third variant was the lowest and the highest alcohol content was observed at the fourth variant (12.1%). Residual sugar of wines ranged from 8.5 to 17.4 g.l-1. At the first variant residual sugar was determined 11.77 g.l-1, so we can classify this wine as a semi-dry. The second variant contained 11.27 g.l-1, so it can be classified as a semi-dry wine as well. By statistical testing by the Tukey HSD test, 3 homogeneous groups were formed, statistically insignificant were the first and the second variants. At the third variant the content of residual sugar was the highest, so the wine is semi-sweet. Residual sugar was found to be the lowest at the fourth variant (8.5 g.l-1), so the wine is in the term of acidity dry.

As top scored wine in sensory evaluation was the fourth variant, where the technology used at must clarification was with minimal dose of clarification preparation and using yeasts (85 points) and followed the third variant with 82.8 points. The worst evaluated was (79.8 point) the first variant - spontaneous fermentation without clarification. Beneficial effect of clarification on the wine preparation based on cellulose, polyvinylpyrrolidone, gelatin and mineral adsorbents the minimum dose was confirmed at using of clarification preparation in must treatment.

Keywords: must, wine, acid content, clarification, sensory evaluation, aroma profile

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