# Residue and residue flour from 'Chardonnay' wine processing

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The wine industry in tropical regions is favored by the different climate and soil conditions, with faster development of vineyards, resulting in grapes and wines with quality and unique flavors. Some countries stand out in this production, including Brazil, India, Thailand and Venezuela, among others. Brazil is a pioneer in the implementation of the wine production in tropical regions, mainly in the Sao Francisco River Valley region. The Chardonnay variety is used for the preparation of white wine in different locations around the world and this process can generate a large amount of residue, which is normally discarded, causing environmental damage. The aim of this study was to evaluate the viability of the production of the flour from the residue of production of Chardonnay white wines and characterize the change of the quality attributes during the transformation of the residue in residue flour. Residue of the winemaking process of Chardonnay variety was separated into portions without drying for the residue analysis and three repetitions were dried in an oven at 65°C (±3°C), until constant weight (48 hours), when the moisture values were obtained. For each repetition, the dried residues were separated and the flour was obtained using an industrial blender and 20 mesh sieves. The analyses realized with the fresh residue were: moisture content, color, pH, acidity and total soluble solids. For the residue flour, the productivity, pH, acidity, soluble solids and color were evaluated. The obtained results for flour and residue were compared according to Tukey´s test at 5% of probability. The values for acidity and total soluble solids were statistically higher in flour when compared with the data obtained from the residue and the inverse was observed for pH. For color analysis, the lightness (L*), and the coordinates a* and b* were higher for the flour. The residue presented 64.91% of moisture and flour productivity was 65.71%, based on the dry residue mass. Higher amounts of acidity and soluble solids in the flour can be explained by the concentration of compounds during the drying process, when an increase from 0.56 to 1.69% and 2.45 to 6.95% was observed, respectively. These variables provide an important data to determine quality levels during the flour processing. Soluble solids comprise compounds responsible for flavor, such as organic acids and carbohydrates. The higher acidity of the flour can also infer the conservation capacity of a food product and limit the use of residue flour in foods where this factor is limited to consumer acceptance. The opposite may occur in relation to the possible contribution of soluble solids content in a flour added product, increasing these values and the fiber amounts, being an important alternative for obtaining new products fortified nutritionally. The color of the residue and flour is important because, when added in other food products, it can determine changes that could interfere in consumer acceptance, since the global appearance is one of the first evaluated variables. For the pH values, an acid characteristic of the products were confirmed. The effect of temperature during the flour processing may have been responsible for the observed quality differences between the residue and flour. It is practicable to obtain the flour from the residue of the Chardonnay white wine production, since a production of 65.71% of flour from the dry residue is possible, being an alternative to reduce the residue generation and for the addition and development of food products with higher nutritional and functional factors.

**Acknowledgments**: The authors would like to thank UNEB, FAPESB and Embrapa.