

S14.295

A Survey on Mineral and Heavy Metal Composition of Brazilian Grape Juice, Wine, and Sparkling Wine Produced from Grapes Cultivated under Sustainable Viticulture

Miele, A.¹; Gianello, C.²

¹EMBRAPA UVA E VINHO, RUA LIVRAMENTO, 515, P.O. BOX 130 95700-000, BENTO GONCALVES, RIO GRANDE DO SUL, BRAZIL

²UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL, BRAZIL

Grape growing and winemaking are important social and economical activities in

Serra Gaúcha, which is located in Rio Grande do Sul, the Brazilian southernmost state. This region cultivates about 35 thousand hectares and produces more than 500 thousand tons of grapes, most of them processed for wine and grape juice production. Serra Gaúcha is a mountainous region with a somewhat mild climate during the four seasons of the year, which is an invitation to the enotourism. Indeed, thousands of people taste wines especially during the winter and summer times. Wine and grape juices are made following traditional methods. However, due to the increasing demand for foods produced according to agro ecological procedures all over the world, a group of growers began to produce grape juice, wine, and sparkling wine following these procedures. The partial change of consumer behavior is due to the perception of the benefits that this kind of product can bring to the human health and to the environment. All products made from the sustainable viticulture are certified by organizations registered in the Brazilian Ministry of Agriculture, Livestock and Food Supply. However, so far data regarding heavy metal contents is limited. Thus, 41 samples of agro ecological products derived from grapes were analyzed, i.e., 28 grape juices, 11 wines, and 2 sparkling wines. Samples were directly collected in the wineries and they represent products from the 2006 and 2007 vintages. For each product, the maximum, minimum, and mean concentrations of the following minerals and heavy metals were determined: phosphorus, potassium, calcium, magnesium, sulfur, copper, zinc, iron, manganese, sodium, aluminium, cadmium, chromium, nickel, lead, molybdenum, cobalt, arsenic, selenium, and vanadium. Results show that the concentrations of the minerals of the agro ecological products were according to Brazilian legislation and those of heavy metals presented very low values.