Amino acids are the main nitrogenous compounds in musts and wines and the main nutrients source for yeast during alcoholic fermentation. These compounds constitute what is commonly referred to as yeast assimilable nitrogen, who have shown the important role of this on yeast growth, fermentation kinetics and consequently on wine quality. The aim of this study was evaluated the change of amino acids profile of the different white grape varieties musts during alcoholic fermentation. The white grape varieties evaluated were Chardonnay, Sauvignon Blanc, Vermentino and Viogner, 2011 vintage, from vineyard of Agua Doce region, Santa Catarina State, Brazil. The sample musts were collated after grape pressing and during alcoholic fermentation (4 samples) until the final wine, for 15 days. The amino acid profile was carry out by higher performance liquid chromatography (HPLC-DAD). Amino acid detection was performed by derivatization reaction with diethyl ethoxymethylenemalonate (DEEMM). It was observed in general, during the first days of the fermentative process, there was a fast consumption of all the amino acids by yeast, exception proline. This initial phase is followed by a slight increment in the amino acid concentration (half of fermentation) as consequence the yeasts had released the amino acids to the fermenting must, and then followed by stabilization in the amino acids consumption. Among all amino acids evaluated for 4 grape varieties, arginine, alanine and serine were the main yeast assimilable nitrogen source, since these compounds showed reduction of initial must concentration higher 90 % after fermentation.