Grapes are consumed in natura or as different products, as wine, juices, jams and others. However, studies about functional characteristics of the most important commercialized cultivars in the domestic market are necessary and must consider the adaptation to different regions, including the semi-arid. It was evaluate the bioactive compounds and total antioxidant activity (TAT) of ‘Isabel Precoce’ grapes, produced under rootstock ‘IAC 572’, in São Francisco River Valley, Brazil, in two productive cycles: from November 2009 to March 2010 and from June to September 2010. Bunches were collected at beginning of the maturation that occurred at 61, 68, 71, 74, 77 and 82 days after fruit set (daf), in the first cycle, and at 53, 60, 65, 70, 74 and 78 daf, in the second one. It was analyzed total anthocyanins, total extractable polyphenols (TEP) and total antioxidant activity (TAT) (using ABTS and DPPH methods). The experimental design was in randomized blocks, with four replicates, constituted by five bunches. When data showed statistical significance, they were submitted to regression and correlation analysis. ‘Isabel Precoce’ grapes showed high anthocyanins content and TEP, mainly on cycles of the second semester of the year, probably because of the high insolation in this semester. Both methods for determinations of TAT were efficient. It was observed positive correlation for anthocyanins content, TEP and TAT determined by ABTS. For DPPH method, the correlation was negative, according to the chemical base involved in this procedure. It was concluded that TAT in ‘Isabel Precoce’ grapes was directly related to these bioactive compounds.