The consumption of natural antioxidants such as phenolics and flavonoids, have been associated with a lower incidence of diseases related to oxidative stress. The objective of this study was to evaluate the concentration of these compounds and antioxidant activity of blackberry tea. The extracts were obtained by macerating tea with stirring for 1 hour at different extractant solutions: hot water (80°C), cold water (15°C) and, solution of 45% methanol, 45% ethanol and 10% acetone. For quantification of total phenolics used the 9110 method of AOAC (1980) by reading absorbance at 760nm. For flavonoids used the method of Zhishen et al. (1999), with readings of the absorbance at 510nm, both in a spectrophotometer. The antioxidant activity was tested by the method of scavenging free radicals with DPPH. It was observed that the content of phenolic compounds was increased to the alcoholic solution (770.93 mg/100g), decreasing with hot water (392.05 mg/100g), and with cold water (330.18 mg/100g). Flavonoids showed the same behavior, with 370.93 mg/100g for the alcoholic solution, 198.05 mg/100g with hot water and cold water to 180.18 mg/100g. For antioxidant activity for all extracts there was an increase of antioxidant activity with concentration, obtained about 68% activity for the extracts tested. Therefore, we conclude that even after the process of preparing tea of blackberry, considerable amounts of phenolic compounds and flavonoids are detected, showing moderate antioxidant activity, which makes this product an option in the prevention of degenerative diseases.