The production of orange juice generates a large quantity of husks and seeds that are discarded, causing waste and compromising the environment. An alternative to minimize such impact and use of the seeds for obtaining oil, that can be used in the industries of food and cosmetics. Thus, the objective of this study was to characterize the oils of seeds of oranges, varieties of Hamlin, Natal, Pera-rio and Valencia, with the contents of phenolic compounds and total antioxidant activity. The phenolic compounds were quantified by spectrophotometry using Folin-Ciocalteu. The amount of antioxidant necessary for decreasing the initial concentration of DPPH• in 50% (EC\textsubscript{50}) was determined graphically. All oils have shown important contents of phenolic compounds total, with the greatest quantity present in the seeds of orange Pera-rio with 4.91 mg EAG/g, followed by Natal, Valencia and Hamlin with 4.80, 4.21 and 3.79 mg EAG/g, respectively. All oils have shown scavenging activity of free radical 2,2’-diphenyl-1-picryl-hidrazila above 50 %, with an emphasis on the oil of the seed of orange Pera-rio with more than 70% of antioxidant activity. The amount of oil needed to decrease the initial concentration of DPPH• in 50% (EC\textsubscript{50}) ranged from 35.08 to 38.31 g oil/g DPPH•. The seed oils of orange variety Pera-rio presented a higher value for the efficiency antirradical (2.79), calculated from the value of EC\textsubscript{50}. Analyzing the antioxidant properties of the oils of seeds of oranges, and possible use of these oils in the food industry.