Açaí is a Brazilian palm fruit, Euterpe oleracea, is widely distributed in northern South America, mainly in Amazonian delta. This fruit is generally consumed as juice and it is recognized for its functional properties for use in food and nutraceutical products, due to its extremely high antioxidant capacity and potential anti-inflammatory activities. Despite the appreciation of Açaí juice in Brazil and even worldwide, the commercialization of Açaí juice is limited. Microfiltration process is applied for juice clarification since it eliminates many of the traditional processing steps, reducing time, energy and addition of clarifying agents. Furthermore, microfiltration process can eliminate microorganisms and compounds responsible for the juice turbidity. The aim of this study was to obtain a Açaí clarified juice, evaluating the flux through a microfiltration membrane (Millipore, celulose ester - 0.22 µm) at 25 °C, transmembrane pressure of 1.0 bar and volumetric ratio concentration of 2. The initial permeate flux in the membrane was 100 kg m⁻² h⁻¹. After an initial flux decline during 30 min, due to membrane compaction and fouling occurrences, the flux was stabilized at 20 kg m⁻² h⁻¹. The clarified juice presented turbidity equal to 13.9 NTU and lipids were not identified in the permeate. The microbiological analysis showed that the microorganism contamination decreases in the permeate in relation to the raw Açaí juice. Finally the obtained results show the potential of the membrane process in the tropical fruit juice processing for beverage industries.