Tilapia (*Oreochromis* sp) is an exotic species that was introduced in Brazil in the early 70’s. Commonly found in northeastern reservoirs represents economic importance to the region. In 2012, the State of Ceará registered an increase of 50% in production compared to 2011, reaching 30,000 tonnes of tilapia for the domestic market and is being consumed mainly fresh. This study aims to evaluate the freshness of tilapia culture in cages through the method of sensory QIM (Quality Index Method), which assesses the post-mortem changes in fish stored under refrigeration and estimates the remaining useful life. It was used two types of processing: hypothermia with water added chlorine (T1) and chlorine-free (T2). The samples were acquired in the dam Castanhão, Ceará/Brazil, and deposited in the number of three specimens per recipient containing water, crushed ice, and 10 ppm chlorine solution (T1). They were then transported in thermal containers to the Laboratory of Meat and Fish of the Instituto Federal do Ceará at Limoeiro do Norte Campus, deposited in plastic trays and stored in cold with average temperature of 7.1 °C. The sensory characteristics were evaluated for 21 consecutive days for the descriptors: eye (pupils, form), gills (color, odor), abdomen (texture), and appearance (color, firmness of flesh). Samples remained demerit zero point for two days. The results indicate that a quality index for 7 tilapia harvested with and without chlorine is 12 and 8 days of cold storage and shelf life of 9 and 8 days, respectively, keeping the same storage conditions.