The measurement of physicochemical parameters is an important tool for evaluating the freshness of fish. The objective of this study was to evaluate physicochemical parameters on whole Nile tilapia stored on ice. Thus, 36 specimens of farmed Nile tilapia were captured, washed and placed in cool box containing flake ice (0°C) in the ice: fish ratio of 1:1. The box was stored in refrigerator at 4°C for 12 days. There were the measurement of pH by the digital potentiometer and nitrogen content of total volatile bases (TVB-N) by the Kjeldahl distillation method. Analyses were performed in triplicate, every 72 hours. The data were analyzed by descriptive statistics. The TVB-N ranged from 5.41 to 25.22 mg N/100g to tilapia whole on days 0 and 12, respectively. There was a gradual increase in TVB-N content during storage, but the limit of 30 mg N/100 g adopted by most international law has not been exceeded. The pH of whole tilapia ranged from 5.89 (day 0) to 7.27 at 12 days of storage. The low initial value of pH can be explained by the intensive system in which the tilapia were grown, with no great effort and struggle, which preserves glycogen stores. And, the high pH observed at the end of the storage period can be explained by the formation of alkaline compounds resulting from deterioration. Thus, it appears that after 12 days of storage in ice Nile tilapia presented content of TVB-N acceptable to the consumer, but a value of pH was raised.