The presence of high counts of proteolytic psychrotrophic micro-organisms in milk is directly related to the loss of yield in cheese production, because this microflora produces thermostable extracellular proteolytic enzymes that degrade milk proteins. This work aimed to evaluate the yield production of Minas Padrão cheese due to action of psychrotrophic microorganisms. Samples of raw milk from a bulk tank of Rio Pomba, MG, Brazil were collected in three replicates. Afterwards, they were kept at 7 °C, and Minas Padrão cheeses were produced from exactly 10 liters of milk, at 0, 24, 48 and 72 hours of storage. The count of mesophilic microorganisms was carried out and the enumeration of psychrotrophic microorganisms was performed in Calcium Caseinate Agar, been the plates incubated at 6.5 °C/10 days. The technical yield and adjusted technical yield of cheese production were determined. Counts of aerobic mesophilic micro-organisms presented an increase of one logarithmic cycle, while psychrotrophic counts increased two logarithmic cycles after 72 hours at 7.0 °C. It was also found after 72 h of storage of raw milk at 7.0 °C, reduction of 3.89% and 19.48% in the technical yield and adjusted technical yield, respectively, of Minas Padrão cheese production in relation to yield evaluated in the beginning (zero time). Thus, the results showed that the yield of Minas Padrão cheese was significantly (p<0.05) affected by storage time of raw milk at 7.0 °C prior to cheese production, which promote great financial loss to dairy industry.