The enrichment of ground roasted coffee with calcium salt and the sensory attributes of the beverage prepared were investigated. Calcium salts were added to enrich the beverage in relation to the recommended daily intake. After various tests, four calcium salts were chosen I, II (organic) and III and IV (inorganic). A bicaudal sensory difference test was given to two trained tasters to evaluate the color, taste and appearance of blends and the prepared beverage. Minimum amounts of 13.4% of salt I, 20.0% of salt II, 15.9% of salt III, and 40.0% of salt IV were added. Pairwise comparison of the organic salts, I and II, and the inorganic salts, III and IV, was conducted to verify which enriched coffee sample was the most similar to the non-enriched ground roasted coffee beverage. Foaming was assessed at filtering to avoid the possible interference of pressure at the pump-pot thermos outlet. Salt I gave the best results for all attributes, except color, which was influenced by the granulometry of the salt. All test samples were lighter than the control coffee beverage. Salt IV gave the best results relative to salt III, especially of aroma, and salt III had a salt enhancement. Among the salts that gave the best results, the use of organic salt gave the closest taste to that of the control beverage. All samples showed similar foaming.