Sour cassava starch is a typical product in the South America produced through the natural fermentation of cassava starch and sun drying, this product presents expansion gluten-free or without addition of baker's yeast. The sour cassava starch was obtained by traditional and modified methods, with 0.5% of glucose on the starch suspension, for a time greater than that usually used in the industry (20-40 days). Among the changes during the fermentation are lowering the pH, organic acids production and consequent increase in the acidity of fermentation water. Parameters such as pH, titratable acidity and total solids were analyzed daily, the sour cassava starch of the modified and traditional processes were collected when acidity reached 2 mL NaOH 0.1 mol.L⁻¹/10mL (19 and 32 days, respectively), and then, every 15 days (total of 75 and 85 days, respectively). There was a pH decrease of the modified process, from 5.68 to 3.89 in 3 days, whereas in the traditional process it was observed in 20 days. The final pH was 3.22 for both processes, the acidity was 5.56 (traditional) and 5.11 (modified) mL NaOH 0.1 mol.L⁻¹/10mL, and the total solids were around 0.1%. The average temperature of the water and the environment during fermentation was 25 °C. The addition of glucose reduced the processing time by thirteen days, which is a benefit to the sour cassava starch industry. Empiricism in the productive sector supports the necessity of sour cassava starch standardization, also aiming the development of new products from the cassava starch fermentation.