Laboratory scale production of gluconic acid by Aspergillus sp. strain G153 shows ammonium sulfate 0.4% (w/v) and glucose 25% (w/v) are the best nitrogen and carbon sources. The ratio of carbon and nitrogen sources that give the highest yield is 125:2. The suitable inoculum is the spores ($2.5-5.0 \times 10^7$ spores per milliliter) which are germinated in the production medium about 16 hours. The sufficient amount of calcium carbonate for neutralizing the acid in the culture medium is 24% (w/w) of initial glucose concentration. Using of the baffle flask with shaking speed at 200 rpm. and at 33°c for 5 days cultivation give the highest yield which is 23.52 grams per 100 milliliters of the culture medium. Glucose from fermented rice can be used as a source of carbon and give 50% yield as of purified glucose.