This research work aims to prepare orange juice concentrate from squeezed orange aliquots. The juice concentrate benefits industries economically because it offers easy transportation and the same taste as squeezed juice. Moreover, juice product becomes available all year to their customers. The oranges along with lemons are soaked in mildly hot water for two hours, Maceration. The juice from these oranges along with lemons is extracted with a manual juice extractor, cold press coupled with material handling and lifting Jack. Then, the extracted juice is concentrated with sucrose before evaporation under a vacuum. Finally, sodium benzoate is added for preservation. Physiochemical evaluation of concentrate is carried out with these widely accepted industrial parameters including pH, conductivity, Brix, total titratability, Brix to percentage acid ratio, Citric acid, and vitamin "C" contents. Sensory evaluation is carried out with fifteen membered, consumer board based on five points Hedonic scale. In conclusion, the production of orange juice concentrate can be eased by the incorporation of steps like maceration, extraction along with lemons, concentration with sucrose, and evaporation under a vacuum. The comparison of physiochemical parameters with ready-to-drink juices indicated good-quality concentrate formation. It has been established from the sensory evaluation that the single parameter that controls the taste is the brix to percentage acid ratio.