Polyphenols are secondary metabolites widely distributed in fruit and vegetables. They may exert protective effects against cancer, cardiovascular and cerebrovascular diseases. However polyphenol antioxidant power also influences their instability in storage. In this work it was evaluated the effect of operational variables in two drying process (freeze and spray drying) and the effect of concentration of Maltodextrin- MD- and Gum Arabic-GA- on the gallic acid content and the crystallinity of dried powder samples, obtained from a model fruit juice. Experiment results showed that the Response Surface Methodology based on Box-Behnken design was useful for optimizing polyphenol final content. For three levels of MD/GA ratio (100/0, 0/100 and 50/50) and three total encapsulant concentration levels (10-20-30%) the feed model juice was lyophilized (chamber pressure from 300 to 500 mTorr and the freezing rate values from 0.3°C/min to 0.7°C/min) and spray dried ( feed flow from 72 to 144 ml/h; inlet air temperature from 80 to 120°C). The best stability in powder freeze dried based on gallic acid final concentration was achieved using 10% of GA encapsulant, and a freezing rate of 0.3°C/min. For the same parameter, the best results in spray drying were obtained when air inlet temperatures between 90 and 110°C, and 10-20% of AG encapsulant in juice were used. Dried powders, suffered variation of polyphenol and crystallinity during storage.