There are a growing number of studies involving fruit residues, however, there is a lack of information about the toxicity in the literature. Were analyzed seeds and peels of guava (*Psidium guayava* L.), sapodilla (*Achras sapota* L.), cashew apple bagasse (*Anacardium occidentale* L.) and mango peels (*Mangifera indica* L.). The residues were dried in a hot-air dryer at 60 °C until complete drying during 24 h and for the obtention of the ethanolic extracts, fruit residues were suspended in ethanol and heated at 60°C for 6 hours in a Soxhlet apparatus. The subchronic toxicity was measured in male Swiss mice, in the dose of 500 mg/kg (oral administration) or sterile saline (0.9% w/v; NaCl) during 14 consecutive days. Body mass, organ weight alteration and blood levels the biochemical parameters were evaluated. The data were presented as the mean ± standard error (s.e.m.) for ten animals per group. Analysis of variance (ANOVA) was performed using Student’s t-test for unpaired values. A value of P < 0.05 was considered to be statistically significant. The overall body mass and the wet weights of the liver, kidney, spleen and heart were considered normal. Serum levels of the enzymatic markers of hepatic function, ALT, AST and urea, differed from respective controls. However, the values found are within the reference limits for mice. In conclusion, in the subchronic study with mice, there were no mortality and signs of toxicity during the experimental period indicating a safe utilization of the analyzed residues.