Some vegetables are rich in nutrients for human consumption, but the food have to be controlled for specifically group who developed chronic renal disease (CDR). The objective of this study was to quantify the potassium removal in vegetables samples, after soaking and boiling three times, so these foods can be safely consumed by individuals who developed CRD. It was also studied the best method of sample decomposition. The vegetables analyzed were potato (*Solanum tuberosum*), sugar beet (*Beta vulgaris*) and black beans (*Phaseolus vulgaris L*). Samples of 150 g were cooked in 450 mL of water purified. Tests were made for samples decomposition, both wet and dry using three types of acids: nitric, sulfuric and hydrochloric. The potassium contents of the samples cooked, and soaking and boiling waters were determined by flame photometry. It was observed large reduction in potassium content after the first boiling of potatoes and beets, as such after the first soaking and boiling for beans. According to these results, it was established that cooking reduced the potassium content in vegetables from the first boiling, and this step being the most effective. The reduction was about 50% in all samples. The cooking can be applied to vegetables like potatoes, beets and beans to reduce the intake of this element for individuals with CDR.