The addition of carbohdrase to soy slurry before obtaining the soymilk may result in tofu with properties and composition different from the traditional. This study investigated the enzymatic treatment of soy slurry using Viscozyme L to hydrolyze carbohydrates and verify the effects on physicochemical and sensory characteristics of silken tofu. The increase of glucose and galactose content in treated tofu (1.36 and 0.19 g/100g, respectively) compared to control (0.12 and 0.09 g/100g, respectively) demonstrated activity in the degradation of polysaccharides releasing simple sugars. The judges in the triangle test detected that the samples were different (p ≤ 0.05). Through descriptive analysis, the samples were characterized mainly by middle cream color (5.3) and astringency (4.3), uniform surface (7.5), low firmness (1.7) and bitter taste (2.1). The treated tofu surface was less uniform (7.3) and had more intense soy odor (4.2) than control (7.7 and 3.2, respectively). The surface uniformity is related to the presence of air bubbles caused by formation of foam during tofu processing. It was expected that the greater amount of glucose in treated tofu would result in a less intense flavor of soy, but this was not observed and may be related to increased intensity of acid taste in the sample due the presence of GDL which was used as coagulant in the soymilk. Although the tofus were different by triangle test and differed in some attributes like appearance and odor, there was no preference (p > 0.05) for one over the other tofu.