The two most widely accepted bleaching systems are “in office” and “home” system. They generally use two different main components: hydrogen peroxide for the former and carbamide peroxide for the latest. **Objectives:** The purpose of this research was to determine in the laboratory the susceptibility to darken after bleaching with these two different systems. **Methods:** The vestibular-mesial facet of 36 bicusps were metalurgically polished up to 0.04 microns leaving a flat surface, the rest of the teeth were covered with varnish. The flat surface was bleached according to the manufacturer’s instruction as followed: 12 samples hydrogen peroxide 35% (Polaoffice, SDI), 12 samples carbamide peroxide 16% (Polanight, SDI) and 12 samples no bleaching (control group). Then, the three groups were all immersed in silver nitrate 50% for four hours and fixed for 24. Shade of the polished surface was recorded before and after bleaching, and after repigmentation using a Vita Shade guide set in a value disposition. **Results:** The mean shades values were 6.7; 3.7; 10.9 for “in office”, 8.8; 1.7; 6 “for home”, and 7.8, 9.4 for “control group”. After ANOVA analysis it was found that, there were no statistically significant differences at the base line. However, after bleaching significant differences were found ($p \leq 0.001$). **Conclusions:** It can be concluded that under the conditions of this study all samples were susceptible to pigmentation, this tendency showed to be greater for hydrogen peroxide.