

Effect of a Truvia™ Rebiana on the pH of Dental Plaque.

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Objectives: Rebaudioside A (common name, rebiana) is a natural, non-caloric high potency sweetener purified from the leaves of *Stevia rebaudiana*. We evaluated the potential cariogenicity of this natural sugar substitute (rebiana) by testing the *in vivo* pH-lowering effect of solutions that were adjusted to be isosweet with 4.7% sucrose.

Methods: We conducted a 24-subject randomized, double-blind, crossover trial with water, 4.7% sucrose and isosweet sucralose as controls. Dental plaque pH assessments were performed at 0, 2, 4, 6, 8, 10, 15, 20, 30, 40, 50, and 60 min using a handheld touch electrode on the mesiobuccal sites of FDI teeth #16, 14, 11, 21, 24, and 26. We evaluated the mean minimum pH (primary), Δ pH and incremental area under the pH curve. **Results:** Rinses with rebiana demonstrated a minimum pH of 6.92 ± 0.08 , (mean \pm SE) that was significantly higher ($p < 0.0001$) than that of sucrose (5.62 ± 0.13) but not significantly different from sucralose rinses (6.70 ± 0.11) and distilled water (6.73 ± 0.08). The absence of a significant carry-across effect in the crossover design was demonstrated by the failure to find a significant effect of the sequence of treatments ($p=0.7$) and the cross product between treatment and sequence ($p=0.8$). Similar results were found in analysis of Δ pH and incremental area under the pH curve. **Conclusion:** This study demonstrated that rebiana isosweet with 4.7% sucrose was no more acidogenic than a water rinse. The dental plaque pH lowering effect was significantly less than sucrose solutions. We can therefore conclude that rebiana was non-acidogenic and met the criteria set by the FDA (21 CFR 101.80) for a non-cariogenic sweetener. This research was funded by Cargill, Incorporated.