

**PH302****Developing A Fermented Probiotic Soy-Coffee Product Enriched with Soy Hull.**

✦ Duarte, Giselle<sup>a,b</sup>, Farah, Adriana<sup>a</sup>, Felberg, Ilana<sup>c</sup>, Deliza, Rosires, Calado, Veronica<sup>d</sup>

✦ <sup>a</sup>Universidade Federal do Rio de Janeiro-UFRJ.

✦ <sup>b</sup>Instituto Federal do Rio de Janeiro.

✦ <sup>c</sup>Embrapa Agroindústria de Alimentos. <sup>d</sup>Escola de Química, UFRJ, RJ, Brazil. Corresponding author contact: afarah@nutricao.ufrj.br

**Rationale:** Considering the various potential benefits reported for soy and coffee (two Brazilian commodities), along with the current consumer trend for healthier alternatives in food products, including lactose free products, in the present work, we aimed to develop a fermented soy-coffee product containing probiotic bacteria, and soybean hull. **Methods:** Soy aqueous extract (instant powder at 10%), sugar, stabilizer, guar and xanthan gums were subjected to pasteurization. The mixture was inoculated with 2% of a probiotic starter culture (*Lactobacillus acidophilus* and *Bifidobacterium*) at 45°C, and incubated for 5 h at the same temperature. After incubation, medium roasted instant arabica coffee and cooked soy hull were added. Acceptance of 11 formulated products was evaluated at 10°C by 129 adults (male and female, coffee and soybean consumers, > 18 years old). Sixty five consumers were recruited at the Federal University of Paraná (Curitiba PR, Brazil) and 64 at the Federal University of Rio de Janeiro (Rio de Janeiro, RJ, Brazil). Formulations were designed according to an experimental design, considering three variables and three central points as follows: sugar content (10, 12.5 and 15%), soybean hull (1, 2 and 3%) and soluble coffee (0.5, 1 and 1.5%). Sample presentation order was balanced to prevent carry over effects. The panelists evaluated the attribute global acceptance. Data from both states were analyzed separately using ANOVA, followed by Fisher test and cluster analysis, using STATISTICA (v.7.0, USA) (differences were considered when  $p < 0.05$ ). **Results:** In both groups, the sample containing 15% sucrose, 0.5% soluble coffee and 1% soy hull received the highest mean acceptance score ( $6.57 \pm 1.1$  in RJ and  $6.64 \pm 0.94$  in PR, in a scale of 1 to 9), corresponding to between “slightly liked” and “moderately liked”. This indicates good consumer acceptance for soy products in Brazil [1]. As no statistical difference between results from both states was observed, the groups were merged for cluster analysis. Three clusters were identified as a function of different acceptance patterns. Cluster 1 liked all samples (acceptance score -  $6.63 \pm 1.39$ ). It was composed of 60% of consumers from Rio de Janeiro, mostly undergraduate students; 18 - 25 years; lower income (72% - 1 to 10 minimum wages-mw) compared to the other clusters; and they were used to drinking coffee often (2 to 4 cups of coffee per day). Cluster 2 was composed of 60% of consumers from Curitiba; 72% were graduate students, and 67% aged 18-25 years, with higher income (46% - 5 a 10 mw). They preferred samples with 0.5% coffee, even though they consumed more coffee per day (35% > 5 cups of coffee) when compared with other clusters. Cluster 3 presented the lowest acceptance score ( $4.01 \pm 1.57$ ). It was composed of 40% teachers and graduate students from Curitiba and Rio de Janeiro, 20% aged 45-55 years, evenly distributed in both states. Fourty percent of this group did not drink coffee often, which could be also a reason for lower acceptance as the product had a predominant coffee taste. **Conclusions:** A nutritionally balanced, lactose free, and well accepted product containing bioactive ingredients was formulated. Adding 0.5 - 1.0% arabica soluble coffee to the soy extract as well as fermenting it eliminated the soy ‘beany’ flavor. In order to select the best final coffee concentration for the product, evaluation of *Lactobacillus acidophilus* and *Bifidobacterium* survival during the product shelf life is underway. **Reference:** [1] *Journal of Sensory Studies*, v. 25 (SUPPL. 1), p. 226-242, 2010.