Sensory properties of different processing condition of asparagus porridge

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Asparagus is abundant source of many nutrients, including vitamins and minerals and contains bioactive components such as rutin and saponin. If asparagus was added to rice porridge, it could be more nutritious and healthy product for patients, elderly people and children. In this study, the sensory properties of asparagus porridge (rice porridge added with asparagus) made by different processing conditions were investigated. Tree-dimensional response surface methodology was used to investigate the effect of ratio of asparagus weight, water volume and heating time on sensory properties of asparagus porridge. The dependent variables were appearance, flavor, viscosity, taste and overall acceptance. R² values for the response surface regression equations were 0.7465 ($p < 0.01$) for appearance, 0.7586 ($p < 0.01$) for flavor, 0.9399 ($p < 0.05$) for viscosity, 0.9406 ($p < 0.01$) for taste and 0.9042 ($p < 0.01$) for overall acceptance. The appearance and taste score for the asparagus porridge decreased with increasing heating time when small water volume was used, but it increased when a large amount of water was used in the preparation. The flavor score sharply increased with increasing asparagus weight. The viscosity score decreased with increasing water volume. Asparagus weight, the water volume, and heating time significantly influenced on the overall acceptance in sensory properties of asparagus porridge ($p < 0.05$). In conclusion, the asparagus porridge can be produced at the optimum conditions of 10% asparagus weight (w/w) and the 1:6.5 rice weight to water volume (v/w) ratio with a heating time of 30 min.