

“Orange Innovation”

Product Development of an Orange Juice Based Drink

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Introduction

Orange (*Citrus sinensis*) is assumed to have originated from Asia. However, orange has been cultivated vastly all over the world. It is mostly cultivated in the Far East, Southern Africa, Australia, Mediterranean regions and subtropical areas of South America and the Caribbean (Morton, 1987). According to Ulrich (2004), the demand for the taste of exotic fruits and new flavours like mango, banana, guava and passion fruit in the major industrialized markets have increased. The demand for variety of fruit drinks driven by the internationalization of consumers demands has increased innovations in this sector. Our product is made of a mixture of Orange, Passion fruit (Maracuja) and Ginger (Ingwer) juices and aims at giving a refreshing, energizing and fun-to-drink fruit drink for students.

Objectives

To develop an innovative orange juice based drink for students with following benefits:

- Creating an energizing, refreshing and fun-to-drink juice
- Introduction of exotic flavours
- Made with natural ingredients (without artificial additives)
- Designed with preferred packaging specifications
- Sourced from Organic and Fair-Trade ingredients



Figure 1:
Sensory booth in Witzenhausen

Methods & procedures

- Literature review
- Focus group discussions (FGD)
- Idea and concept generation
- Prototype development
- Sensory evaluation (consumer test)
- Marketing concept

Constraints

- Difficulties in finding 100% passion fruit juice
- Difficulties recruiting focus group discussion participants from three German Universities (Göttingen, Fulda & Kassel)
- Design of packaging
- Language barrier

Results & discussion

| Prototype | Formulation |
|-----------|--|
| 5 | 5% ginger juice, 25% passion fruit nectar, 70% orange juice |
| 8 | 8% ginger juice, 20% passion fruit nectar, 72% orange juice |
| 10 | 10% ginger juice, 20% passion fruit nectar, 70% orange juice |
| 12.5 | 12.5% ginger juice, 19.5% passion fruit nectar, 68% orange juice |
| 15 | 15% ginger juice, 19% passion fruit nectar, 66% orange juice |

Table 1: Prototypes formulations

Results & discussion (2)

Overall Acceptance

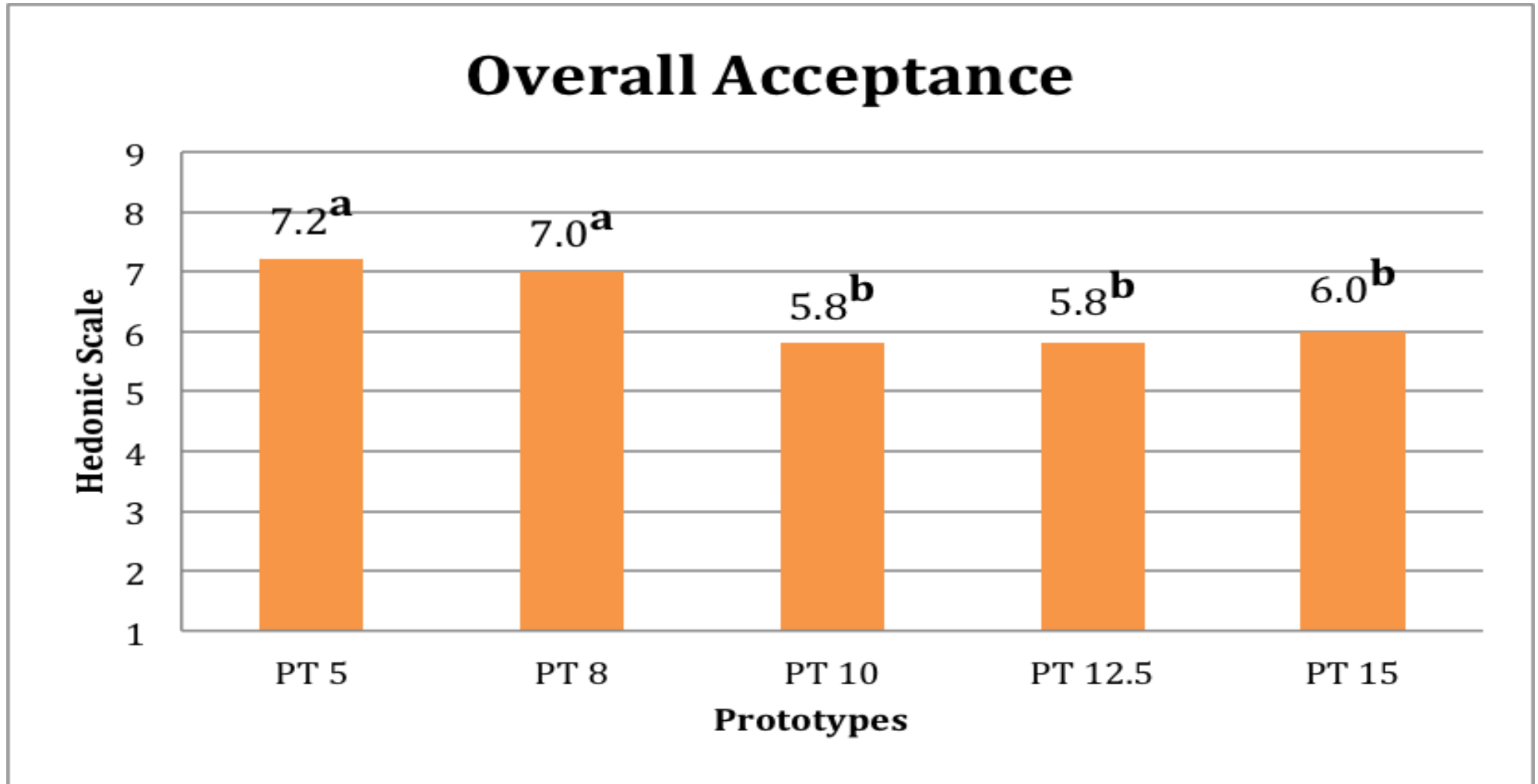


Figure 2: Overall acceptance of prototypes
(difference in small letters indicates significant difference at 5% level)

Results & discussion (3)

- High increment in Ginger leads to a significant decrease in Overall Acceptance
- There is no significant difference between Prototypes 5 and 8; hence, they share similar sensory characteristics
- In terms of general preference rank, Prototype 8 has the lowest sum of ranks (the lower the sum of rank, the more preferred the prototype)
- Initial purchase intention is 73% and repeat purchase intention is 56% (Prototype 8)
- The concept Ging Up “*Spice Up Your Day*” with glass of packaging size 330 ml was the most preferred

Conclusions

- From the sensory test results, Prototype 8 with 8% ginger juice is chosen as the final product
- Although repeat purchase intention is lower than initial purchase intention, the chosen prototype (Prototype 8) is generally acceptable since 73% of panellists like it
- Based on the interpreted results, Prototype 8 has a high chance to be successful on the German fruit juice market for students because it provides a new variant of innovation in orange juice based drink

References

Morton, J. (1987). Orange. In: “Fruits of Warm climates”. Julia F. Morton, Miami, FL. pp. 134-142.

Ulrich, M. (2004). The Market for Tropical Juices in Europe. Journal for the fruit processing and juice producing European and overseas industry 14 (4), 279.