



Development of Snacks from Dried - Squid Skin



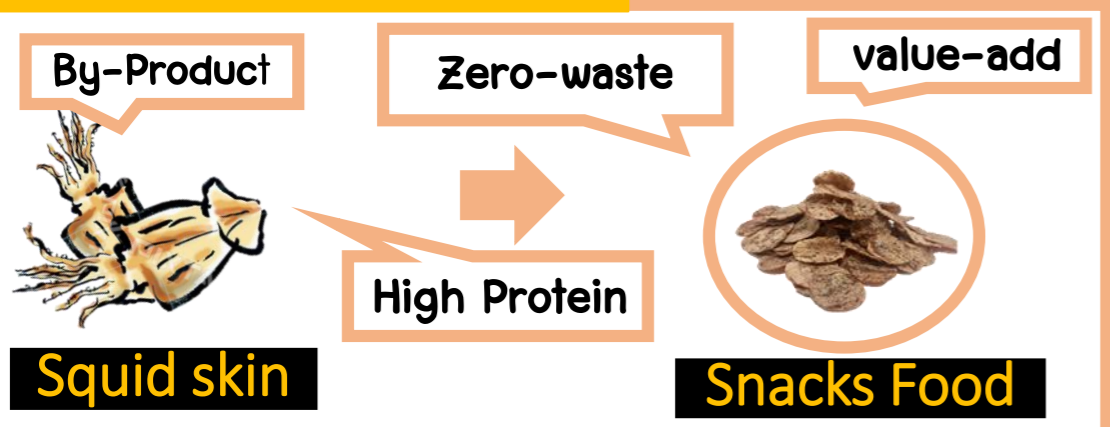
Jirawan Chaam, Thaksina Dencharoen and Srivikorn Ditudompo.

Division of food Science and Nutrition, Faculty of Agricultural Product Innovation and Technology, Srinakharinwirot University.

Abstract

Squid skin is by-product from squid industry there are a lot of research tried to find the method in order to increase the value of these waste. The objective of this study was to develop the healthy snacks from dried-squid skin. The effects of flour type (wheat flour, rice flour, waxy rice flour, cassava flour and corn flour) flour concentration (20%, 25% and 30%) and dried-squid skin concentration (20%, 30% and 40%) on the physico-chemical properties of snacks were investigated. Increase in flour concentration resulted in increases in hardness, L*, a*, and b* values of the snacks ($p > 0.05$). Increase in dried-squid skin concentration resulted in increases in hardness, Aw, L*, b* values and decrease in a* value of the snacks ($p > 0.05$). The dried-squid skin concentration had no significantly effect on the moisture content. The sensory evaluation pointed out that snacks with 30% corn flour and 20% dried-squid skin gained the highest hedonic score.

Introductions



Innovations



Methods

Analysis

- Color
- Water activity
- Moisture content
- Proximate composition
- Texture analysis
- Sensory evaluation

* Step 2 : Addition of squid skin

How to made snacks



Results & Discussions

Table 1. Physical properties of chicken chips with different flour.

| Flour | MC (%wb) | Aw | Hardness (g) |
|---------------------|-------------------------|-------------------------|-----------------------------|
| Wheat flour 20% | 5.92±0.99 ^a | 0.120±0.00 ^b | 2704.65±683.52 ^a |
| Wheat flour 25% | 3.80±0.23 ^b | 0.205±0.00 ^a | 2357.72±669.52 ^a |
| Wheat flour 30% | 4.70±0.07 ^b | 0.204±0.00 ^a | 2356.28±979.04 ^a |
| Waxy rice flour 20% | 6.26±3.71 ^a | 0.412±0.00 ^a | 1429.00±667.35 ^b |
| Waxy rice flour 25% | 4.80±0.06 ^a | 0.420±0.00 ^a | 2152.93±579.29 ^a |
| Waxy rice flour 30% | 6.26±3.42 ^a | 0.244±0.01 ^b | 1997.15±429.97 ^a |
| Rice flour 20% | 3.40±0.11 ^a | 0.197±0.01 ^b | 893.76±286.54 ^c |
| Rice flour 25% | 3.05±0.05 ^b | 0.222±0.07 ^a | 1461.28±405.96 ^b |
| Rice flour 30% | 3.17±0.00 ^b | 0.178±0.02 ^c | 2371.79±772.64 ^a |
| Corn flour 20% | 4.19±0.08 ^{ab} | 0.222±0.05 ^a | 1248.09±563.47 ^b |
| Corn flour 25% | 3.74±0.47 ^b | 0.216±0.05 ^a | 1475.67±681.79 ^b |
| Corn flour 30% | 4.48±0.16 ^a | 0.161±0.05 ^b | 2683.08±801.36 ^a |
| Cassava flour 20% | 3.37±7.86 ^b | 0.165±0.06 ^c | 840.59±190.86 ^b |
| Cassava flour 25% | 4.06±0.40 ^a | 0.254±0.06 ^b | 1658.02±651.15 ^a |
| Cassava flour 30% | 4.30±0.07 ^a | 0.281±0.06 ^a | 1934.57±710.36 ^a |

Table 2. Physical properties of chicken chips corn flour base with different dried squid skin.

| Squid skins | MC (%wb) ^{ns} | Aw | Hardness (g) |
|-----------------|------------------------|-------------------------|-----------------------------|
| Squid skins 20% | 1.63±0.02 | 0.15±0.01 ^a | 876.17±197.72 ^b |
| Squid skins 30% | 1.45±0.11 | 0.16±0.01 ^{ab} | 887.05±202.64 ^b |
| Squid skins 40% | 3.97±3.39 | 0.17±0.01 ^b | 1229.14±227.76 ^a |

Conclusions

Increase in flour concentration and increase in dried-squid skin concentration resulted in increases in hardness. The sensory evaluation pointed out that snacks with 30% corn flour and 20% dried-squid skin gained the highest hedonic score.

Sensory test of chicken chips dried-squid skin 20% addition with different flour.

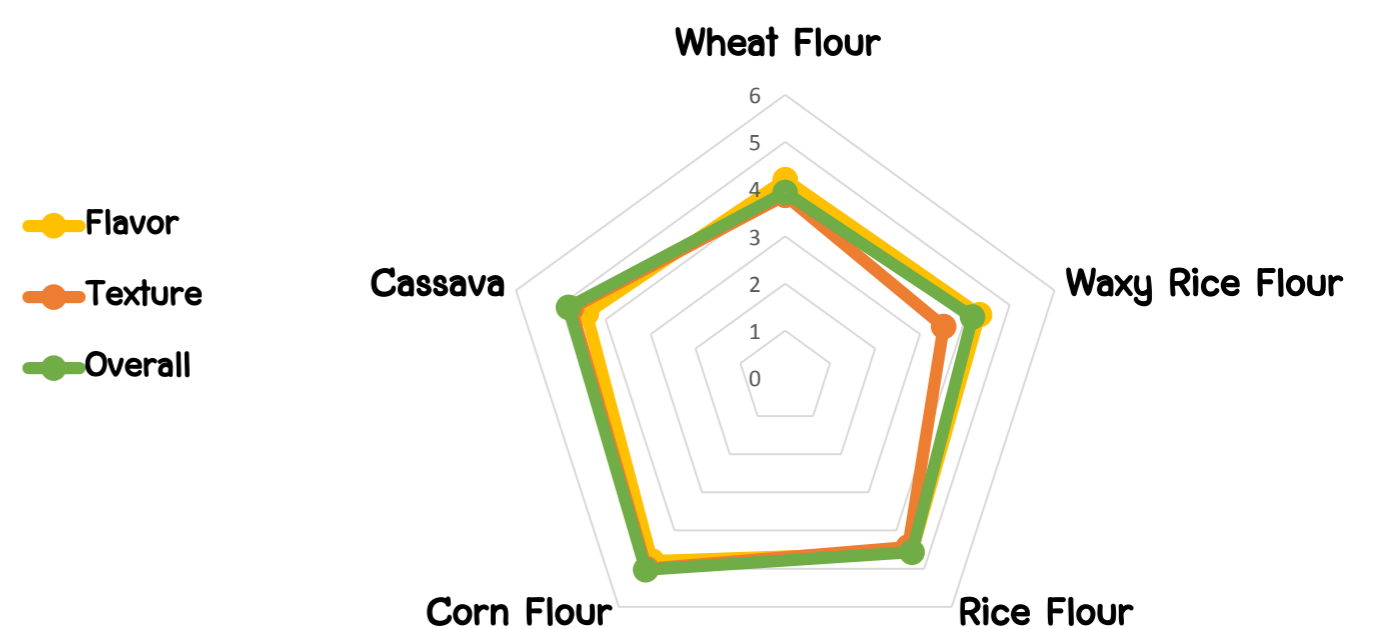


Figure 1. Sensory test of chicken chips dried-squid skin 20% addition with different flour.

Sensory test of chicken chips (corn flour) with different dried-squid skin

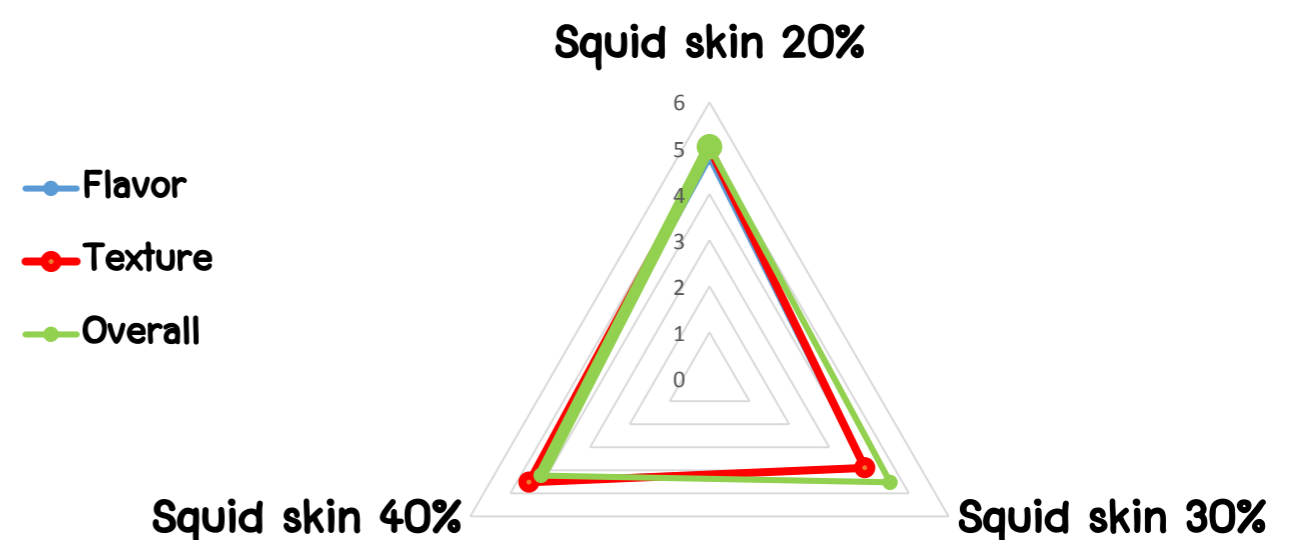


Figure 2. Sensory test of chicken chips (corn flour) with different dried squid skin.

References

Sukkhown, P., Jangchud, K., Lorjaroenphon, Y. and Pirak, T. (2017). Flavored-functional protein hydrolysate from enzymatic hydrolysis of dried squid by-product: Effect of drying method. Food Hydrocolloids. 1: 1-10.