

CHAPTER 5 – CONCLUSION

5.1 Conclusions

This research was conducted to develop instant noodle seasonings that are high in protein and low in salt level by utilizing overripe tempe to fight the high stunting rate in Indonesia. The initial stage of this research involved comparing two forms of overripe tempe, namely overripe tempe powder and overripe tempe crumbs. The results indicated that the powdered form of overripe tempe was preferred by the panelists compared to overripe tempe crumbs, and for that reason, the powdered form was selected for formulation. The seasoning formulation was carried out using Design-Expert 13 ® software. The optimized seasoning formulation achieved was composed of 3.181g of overripe tempe, 5.497g of isolated soy protein, 0.53g of yeast extract, 2.792g of sugar, 0.266g of salt, 0.55g of chicken powder, and 0.34g of garlic powder. This optimized formulation was validated using Design-Expert 13 ® to confirm the software prediction. The predicted mean from Design-Expert 13 ® used the 95% confidence interval. The validation results of the final formula fell within the 95% confidence interval. Following this, a high-protein and low-salt seasoning was successfully formulated and validated.

5.2 Suggestions

Further research should investigate large-scale production methods of the seasoning, including optimizing the production process. Conducting a shelf-life analysis under various storage conditions was also need to be conducted, where due to the protein content in the seasoning, where the protein content in the product potentially leading to changes in texture, flavor, and nutritional value, due to protein oxidation, thereby shortenin the product's shelf life (Deniz Günal-Köroğlu *et al.*, 2024). An evaluation of sensory acceptance test can be done to children to obtain a more objective data based

on the target market. A reformulation can be done to increase the likeness of the seasoning to make it acceptable to a wider range of consumers.

