

Evaluation of binders for Tilapia fish sausage production and shelf life evaluation in frozen storage

D.D.A.D.U. Deshapriya¹, A.N. Lalantha² and C.V.L. Jayasinghe^{1*}

¹*Department of Food Science & Technology, Faculty of Livestock, Fisheries & Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila 60170, Sri Lanka*

²*Keells Food Products PLC, Ja-Ela, Sri Lanka*

Consumption of Tilapia (*Oreochromis niloticus*) is restricted due to its muddy flavour and odour. This study aims for the development of tilapia mince based pre-cooked sausage. However, as tilapia muscle tissues are more easily broken, improving the binding property is especially addressed in this study. Synergistic interaction between isolated soy protein (ISP), modified starch (Tartic), red rice flour and white rice flour were tested with five combinations of binders. White rice flour (6%), ISP (2%) and Tartic (0.5%) were selected as the best combination. That combination shows higher water holding capacity (58%) and lowest cooking losses (13%) after 20 days at -18°C. Accordingly, tilapia mince (60%), water (24%), palm oil (5%), binders (8.5%), spices (1.5%), and flavour enhancers (1.0%) were identified as the best ingredients composition. The most preferable spice mixture was red chilli, garlic, ginger, cinnamon, clove and black pepper that could eliminate the muddy flavour of tilapia. Proximate composition of tilapia sausage is 65% moisture, 34% total solid, 14% protein, 6% fat and 155 kcal/100g. Tilapia sausages were stored at -10°C, -15°C and -22°C for the accelerated shelf life testing and results indicated that 9 months of shelf life can be achieved for tilapia cooked sausage at -18°C. Results conclude that tilapia fish mince can be successfully utilized for preparation of acceptable and safer fish sausage with accessible price.

Key words: Binders, Tilapia sausage, shelf life, synergistic interaction, texture,

Acknowledgements: NARP/12/WUSL/LFN/01 project is acknowledged for providing the financial assistance and Keells Food Products PLC for their operational and technical support.

*cvljayasinghe@gmail.com