1. INTRODUCTION

Sources of protein in food can be divided into two sources, namely animal and vegetable protein. One example of animal protein sources is fish. Consumption of animal protein in Indonesia is still low. In terms of nutrition, protein is a source of energy and amino acids, which are essential for human growth. Protein is a new tissue-forming material that always occurs in the body. Fish is one source of protein needed by humans because it has a high protein content [1].

One species of freshwater fish native to Indonesia is bonylip barb which is still lacking in use because of its many thorns. Nilem fish or bonylip barb meat is also one of the sources of animal protein needed for human life that will be used as fish protein concentrate [2]. Fish protein concentrate is one of the processed fishery products, but the use of fish protein concentrate is not optimal. Fish protein concentrate is a form of product made by separating fat and water from the body of the fish which is a "*stable protein*" from fish for human consumption and with a more concentrated protein content than the original. Fish protein concentrate is more flexible in its utilization [3].

Wet noodles will be added Bonylip barb protein concentrate. Wet noodles are types of noodles that have a boiling process after the cutting stage and before being marketed. Wheat is the basic ingredient of making wet noodles [4]. Wet noodle was chosen because it is one of the foods that are much in demand by people in Indonesia. This is supported by various advantages possessed by the noodles, especially in terms of texture, taste, appearance, and practicality of their use.

Bonylip barb fish protein concentrate added to the wet noodles has the potential to increase the nutritional value of the protein. So far, there is still little research on the addition of bonylip barb protein concentrate to wet noodles. Wet noodle processing needs to be examined its closest level to determine the nutritional level of wet noodles by proximate analysis which includes water content, protein content, fat content and ash content.

2. MATERIALS AND METHOD

2. 1. Tools and Materials

The tools used in this research are digital scales, blenders, electric ovens, gas stoves, jars, basins, spoons, pans, filters, fabric, blades, knives, pH meters, measuring cups 50 ml, noodle cutters, trays and cutting boards. The materials used in this research are bonylip barb/nilem, hexane, sodium bicarbonate ($NaHCO_3$), salt, wheat flour, vegetable oil, eggs and water.

2. Reasearch Methods

The method used in this research is experimental with control treatment and 5%. Two treatments for adding bonylipbarp protein concentrate to wet noodles are as follows:

A = 0% of bonylipbarp protein concentrate from wheat flour
B = 5% of bonylipbarp protein concentrate from wheat flour

Making wet noodles using a modified formulation in accordance with the treatment the addition of bonylipbarp protein concentrate can be seen in Table 1.

Table 1. Formulation of Making Wet Noodles

Material	Treatment	
	0%	5%
Wheat Flour (g)	150	150
Bonylip barb protein concentrate (g)	0	5
Water (ml)	70	70
Salt (g)	10	10
Eggs (g)	45	45
Vegetable oil (ml)	15	15

Procedures for making modified wet noodles [5] as follows:

1. 150 g wheat flour mixed with 70 ml water, 10 g salt, 45 g eggs and 15 ml vegetable oil added in one container.
2. Bonylipbarp protein concentrate is added according to treatment (0%, and 5%).
3. The mixture is stirred until smooth.
4. The batter is compacted and made with a noodle cutting tool into strands with a width of approximately 0.5 cm.
5. The noodles are boiled for 1 minute at 100^{o}C and vegetable oil is added to prevent the noodles from sticking.
6. Noodles are picked and drained.

2. 3. Observed Parameters

Chemical test is carried out in order to determine the nutritional value of wet noodles. Proximate analysis observed was water content, ash content by gravimetric method, fat content by soxhlet method, protein content by kjedahl method. After getting the nutritional content of wet noodles, to determine the standard nutrient content of bonylipbarp protein concentrate on control wet noodles and 5% compared to (Indonesian Nasional Standard) SNI 01-2987-1992.

2. 4. Data Analysis Proximate

The proximate test are performed to determine the nutritional content of a product. Proximate analysis of wet noodle products includes determination of protein, fat, ash and water content.

2. 4. 1. Protein Content (AOAC 2005)

Sample 0,25 g was put into the Kjedahl flask. Selenium 0.25 g and 3 ml H_2SO_4 were concentrated added to the sample, after being cooled 50 ml of distilled water and 20 ml of 40% NaOH were added. Then the distillation is carried out, the distillation results are collected in an Erlenmeyer flask containing a mixture of 10 ml H_2BO_3 2% and 2 drops of the indicator *Brom Cresol Green-Methyl Red* pink. The same treatment is also carried out on the blanko after the distillate volume is pink, so that the total nitrogen content is obtained. Protein content is obtained by multiplying the nitrogen content by multiplication factors for various foods ranging from 5.18 to 6.38. The following formula for calculating protein content as follows.

$$\text{Nitrogen level (\%)} = \frac{(SB)\ x\ N\ HCL\ x\ 14}{W}\ x\ 100$$

$$\text{Protein level (\%)} = \text{N level x } 6.25$$

Information:

S = sample titration volume (ml)
B = blanko titration volume (ml)
N HCl = concentration of solution HCl (0.02 N)
W = Weight of sample (g)

2. 4. 2. Fat content (AOAC 2005)

Sample 2 g is spread over a cotton cloth with filtered paper and rolled to form a *thimble*, the sample is put into a Soyhlet flask, extracted for 6 hours with 150 ml of hexane fat solvent, the extracted fat was then dried in an oven at 100˚C for 1 hour.

$$\text{Fat content (\%)} = \frac{\text{final pumpkin weight (g)}}{\text{sample weight (g)}}\ \text{x } 100$$

2. 4. 3. Ash content (AOAC 2005)

Sample 1 g is placed in a porcelain cup, the sample is burned to the point where it does not smoke, is blended in a furnace at 600˚C for 6 hours, ash weight is weighed and ash content is calculated by the equation below:

$$\text{Ash content (\%)} = \frac{\text{Ash weight (g)}}{\text{Dry sample weight (g)}}\ \text{x } 100$$

2. 4. 4. Water content (AOAC 2005)

Sample 1 g is weighed in a petri dish, the sample is put into the oven with temperature 105˚C for 8 hours, then the sample is weighed and the water content is calculated using the formula:

$$\text{Moisture content (\%)} = \frac{\text{Initial-weight weight (g)}}{\text{Weight of sample (g)}} \times 100$$

3. RESULT AND DISCUSSION

3. 1. Water Content of Wet Noodles

Water conten in food ingredients also determines acceptability, freshness, and durability of these foodstuffs [6]. Water is also an important component in food ingredients because water can affect the appearance, texture and taste of food [7]. Test results of the water content of wet noodles with the addition of bony lip barp protein concentrate can be seen in Figure 1.

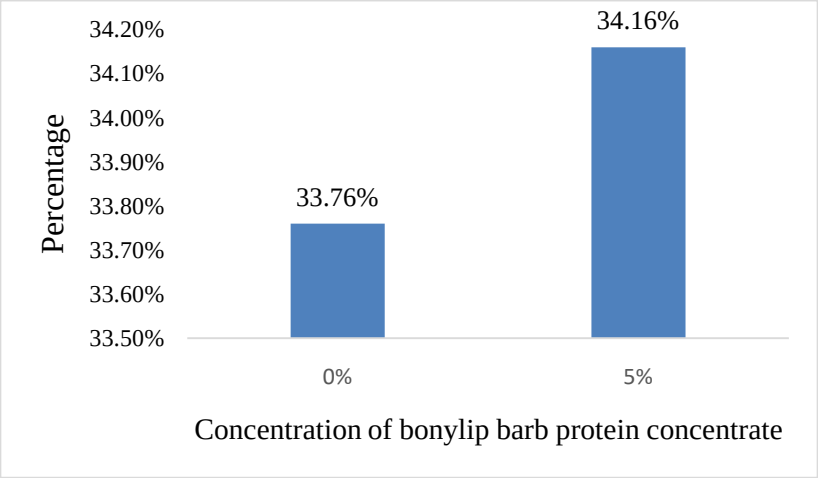

Figure 1. Water Content of Wet Noodles

Based on the results of the analysis of water content of wet noodles with control treatment has a water content of 33.76% and wet noodles with a treatment of 5% has a moisture content of 34.16%. The addition of 5% of bonylip barb protein concentrate was higher compared to the water content of wet noodles without the addition of bonylip barb protein concentrate. This happens because protein is the main component that plays a role in the absorption of water, in addition to other components [8].

The quality requirements of wet noodles based on SNI Wet Noodles 01-2987-1992 state that the maximum water content in wet noodles is 35% [9]. The moisture content of the wet noodles produced is still in the range of values required by Indonesian Nasional Standard (SNI), so it can be said that the water content of the wet noodles with the addition of bonylip barb protein concentrate meets the quality requirements of wet noodles based on [9].

3. 2. Protein Content of Wet Noodles

Protein is a food substance that is very important for the human body. Protein is the biggest component after water. Protein is a source of amino acids that contain elements C, H, O and N which are not owned by fats and carbohydrates [10]. The results of the protein content test of wet noodles with the addition of bonylip barb protein concentrate can be seen in Figure 2.

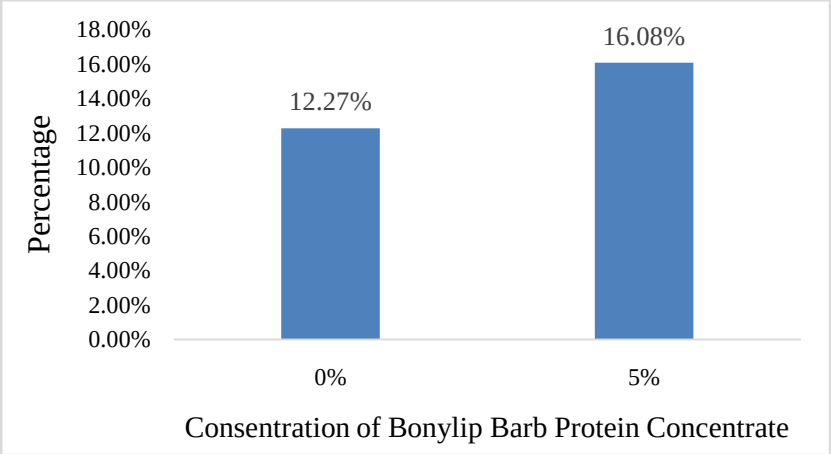

Figure 2. Protein Content of Wet Noodles

The minimum protein content in wet noodles is 3% [9]. Based on observations of the protein content of wet noodles with control treatment has a protein content of 12.27% and wet noodles with 5% treatment has a protein content of 16.08%. So it can be said that the protein content of wet noodles with the addition of nbonylip barb protein concentrate meets the quality requirements of wet noodles based on [9]. Protein content in wet noodles at 5% treatment increased due to the addition of bonylip barb protein concentrate as an additional source of animal protein. The use of raw materials that contain high protein will produce processed products with high protein content and vice versa [11].

3. 3. Fat Content of Wet Noodles

Fat is a source of energy and energy reserves for the body that can provide greater energy value than carbohydrates and protein [10]. Fats are found in almost all foods with varying amounts of content. The results of the fat noodle test results with the addition of bonylip barb protein concentrate can be seen in Figure 3.

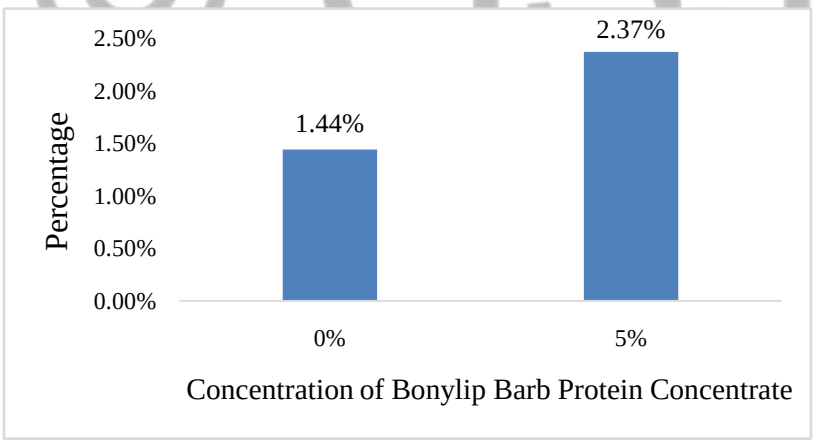

Figure 3. Fat Content of Wet Noodles

The results of the fat noodle test on wet noodles, it was found that the fat noodle fat control treatment was 1.44% and 5% treatment by 2.37%. Based on the results of measurements of fat content in wet noodles shows that the fat content increases with the addition of fish protein concentrate.

3. 4. Ash Content of Wet Noodles

Ash are inorganic substances from the combustion of an organic material [8]. Ash content associated with minerals ingredient, the amount of ash in a foodstuff refers to the high content of minerals in that foodstuff. Ash contained in a product is limited in number. The following graphs of ash content can be seen in Figure 4.

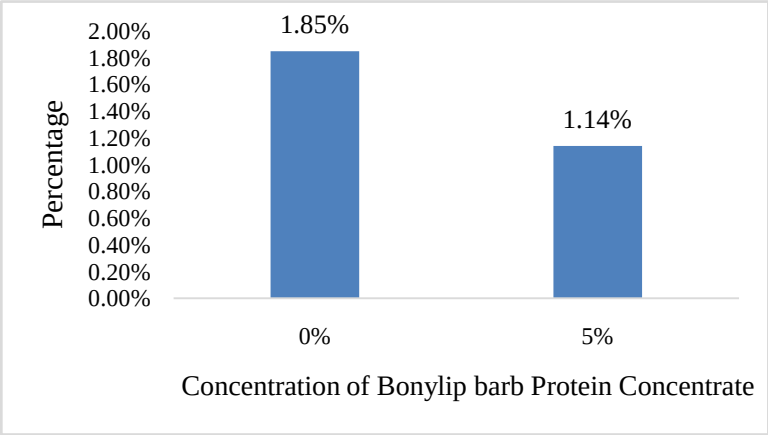

Figure 4. Ash Content of Wet Noodles

The maximum ash content of wet noodles is 3% [9]. The control treatment of wet noodle ash content is 1.85% and the 5% treatment of wet noodle ash content is 1.14%. The second treatment of wet noodles with the addition of nilem fish protein concentrate still meets the quality requirements of wet noodles. All treatments of wet noodles with the addition of bonylip barb protein concentrate still meets the quality requirements of wet noodles.

3.5 Summary of Observations

The overall results of observation wet noodles with addition of bonylip barb concentrate protein in Table 2.

Table 2. Summary of ObservationsBonylip barb Concentrate Protein

Observation of	Wet Noodle Treatment with the Addition of Bonylip barb Protein Concentrate (%)			
	0	**2.5**	**5**	**7.5**
Water Content (%)	33,73	-	34,16	-
Protein Content (%)	12,27	-	16,08	-
Fat Content (%)	1,44	-	2,37	-
Water Content (%)	1,88	-	1,14	-

Based on the results observations of the wet noodle proximate test with the addition of fish protein concentrate were carried out in the control treatment and most preferably the panelists found that in the control treatment the content they had was 33.76% water, 12.27% protein, 1.44% fat and 1.85% ash, while the most preferred treatment of 5% is the water content 34.16%, protein 16.08%, fat 2.37% and ash 1.14%.

4. CONCLUSIONS

Wet noodles with the addition of nilem fish protein concentrate of 5% from 150 g of wheat flour produce wet noodles with a water content of 34.16%, protein content of 16.08%, fat content of 2.37 and ash content of 1.14%. The values are meets the Indonesian Nasional Standard (SNI) 01-2987-1992.

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