

3. RESULT

This research was conducted in order to investigate the effect of vacuum fried and atmospheric deep fried toward purple sweet potato chips quality parameters. In this research, one temperature and time setting was used. The settings are, 105°C and 420s for vacuum frying method, 160°C and 120s for atmospheric frying method. On the final product was conducted color and texture analysis, oil and water content analysis, monomeric anthocyanin content analysis, and sensorial acceptance test.

3.1. Color of Purple Sweet Potato Chips

The result of the color analysis test could be seen in Table 1. It can be observed that L* and a* (red-green) scale in atmospheric fried chips is significantly higher compared to vacuum fried chips. Meanwhile, b* (blue-yellow) scale in atmospheric fried chips is significantly lower than vacuum fried chips.

Table 2. Color of Purple Sweet Potato Chips

Frying Method	L	a	b
Atmospheric	20,97±0,03 ^a	12,95±0,06 ^a	-1,90±0,23 ^a
Vacuum	19,97±0,06 ^b	13,76±0,06 ^b	5,23±0,05 ^b

Keys:

- All data are presented in mean ± standard deviation
- Data with different letter superscript at each column shows significant difference between two frying methods based on Independent t-test ($p>0,05$)

3.2. Texture of Purple Sweet Potato Chips

The result of texture analysis could be seen in Table 2. It could be seen that there's a difference between vacuum fried chips and atmospheric fried albeit not significant. Bioyield point represents the force needed to break the crust surface. Bioyield is directly proportional with chips' crispiness.

Table 2. Texture of Purple Sweet Potato Chips

Oil Frying	Bioyield point (N)
Atmospheric	10,53 ±3,52 ^a
Vacuum	12,72 ±5,66 ^a

Keys:

- All data are presented in mean ± standard deviation
- Data with different letter superscript at each column shows significant difference between two frying methods based on Independent t-test ($p>0,05$)

3.3. Moisture and Oil Content of Purple Sweet Potato Chips

Table 3., shows the result of moisture and oil content analysis on both vacuum and atmospheric fried chips. Both of content analysis have some significant differences. Atmospheric fried chips have significantly higher oil content and lower moisture content compared to vacuum fried chips.

Table 3. Moisture and Oil Content Analysis Result

Oil Frying	Moisture content (%)	Oil content (%)
Atmospheric	1,36±0,04 ^a	28,53±0,1 ^a
Vacuum	3,56±0,07 ^b	22,28±0,6 ^b

Keys:

- All data are presented in mean ± standard deviation
- Data with different letter superscript at each column shows significant difference between two frying methods based on Independent t-test ($p>0,05$)

3.4. Monomeric Anthocyanin Content Analysis of Purple Sweet Potato Chips

The result of monomeric anthocyanin content analysis could be seen in Table 5. It could be deduced that there are differences on anthocyanin content, while not significantly different. Vacuum fried chips have monomeric anthocyanin content of 22,26 mg/L, and atmospheric fried chips have 19,20 mg/L.

Table 4. Result of Monomeric Anthocyanin Content Analysis

Oil Frying	Monomeric Anthocyanin (mg/L)
Atmospheric	19,20±15,9 ^a
Vacuum	22,26±8,85 ^a

Keys:

- All data are presented in mean ± standard deviation
- Data with different letter superscript at each column shows significant difference between two frying methods based on Independent t-test ($p>0,05$)

3.5. Sensorial Acceptance Result of Purple Sweet Potato Chips

The result of sensory analysis could be seen in Table 6. It could be observed that the parameters tested were color, flavor, crispiness, oiliness, and overall acceptability. Even though the result varied, the differences are not significant.

Table 5. Result of Sensory Analysis

Oil Frying	Color	Flavor	Crispiness	Oiliness	Overall
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Control	6,00±2,12 ^a	6,41±2,12 ^a	5,12±2,03 ^a	3,82±1,98 ^a	6,00±1,70 ^a
Atmospheric	6,00±2,19 ^a	6,38±2,42 ^a	5,06±2,08 ^a	3,56±1,71 ^a	6,00±1,75 ^a
Vacuum	6,44±2,13 ^a	4,88±2,33 ^b	4,81±2,07 ^a	3,63±1,63 ^a	5,19±2,14 ^a

Keys:

- All data are presented in mean ± standard deviation
- Data with different letter superscript at each column shows significant difference between two frying methods based on Independent t-test ($p > 0,05$)

