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FATTY ACIDS AND IRON CONTENT IN A PUREE MADE FROM SARDA CHILIENSIS CHILIENSIS (BONITO) AND IPOMOEA BATATAS (YELLOW SWEET POTATO) FOR CHILDREN AGED 2 TO 3 YEARS IN LIMA, PERU.

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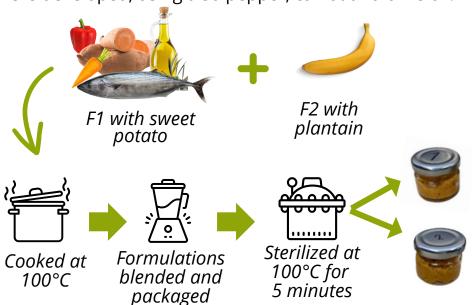
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INTRODUCTION & AIM

Anemia affects 42% of children aged 6 months to 5 years (ENDES 2022) (1), and omega-3 fatty acids are essential for healthy development in children. Bonito (Sarda chiliensis chiliensis), being rich in both iron and omega-3, offers a valuable nutritional source (2). This study aims to assess the content of iron and omega-3 in a puree made from bonito and sweet potato (Ipomoea batatas) designed for children aged 2 to 3 in Lima, Peru.

METHOD

Two formulations with different proportions of sweet potato were developed, using also pepper, carrot and olive oil.



Qualitative laboratory study. Analysis of **iron** with atomic absorption spectrometry (NOM 117-SSA1, 1994) and **fatty acids** using chromatography (ISO 12966-1:2014).

RESULTS

Differences were observed in **saturated** and **polyunsaturated** fatty acids, but **not in monounsaturated** and **unidentified** fatty acids. **No significant differences** were observed in **iron** content (Table 1). Table 2 presents the results of the adequacy percentage. Chromatograms are shown in Figures 1 and 2.

COMPONENTS		FORMULATION 1	FORMULATION 2	P VALUE
Fatty acids (%/100 g)	Saturated	1.09 ± 0.01 ^a	1.25 ± 0.01 ^b	0.01
	Monounsaturated	2.10 ± 0.01^{a}	2.17 ± 0.08^{a}	0.37
	Polyunsaturated	0.90 ± 0.01^{a}	0.99 ± 0.01 ^b	0.02
	Unidentified	0.050 ±0.03°	0.06 ± 0.02^{a}	0.86
	Iron (mg/100g)	4.96 ± 0.05^{a}	4.98 ± 0.02°	0.65

Table 1. Composition of iron and fatty acids content of the two formulations.

FORMULATION		AMOUNT IN 40g	NUTRITIONAL REQUIREMENTS	ADEQUACY PERCENTAGE (%)
1	Iron	2	0.7	286
	Omega 3	0.08	0.07	114
2	Iron	2	0.7	286
	Omega 3	0.08	0.07	114

Table 2. Iron and Omega-3 Content per 40 g of product relative to age requirements.

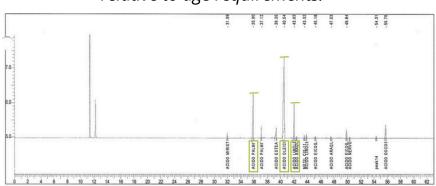


Figure 1. Fatty acids profile in formulation 1.

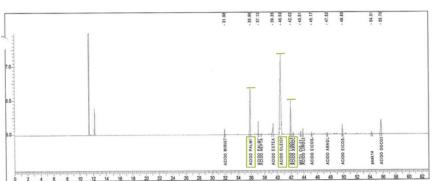


Figure 2. Fatty acids profile in formulation 2.

CONCLUSION

 Both formulations exceeded 10% of the requirement of iron and Omega 3. Due to their content, could be useful in social programs addressing malnutrition and anemia.

FUTURE WORK

- Assess plantain inclusion in fish-based products for sensory acceptability across different age groups and cultures.
- **Investigate texture modifications** to improve sensory experiences.
- Conduct a **shelf-life analysis** to ensure product stability and safety.

REFERENCES

- 1. Llull M. 42% of Peruvian girls and boys suffer from anaemia [Internet]. NODAL. 2023 [cited 2024 Jun 2]. Available from: https://www.nodal.am/2023/06/peru-segun-la-encuesta-demografica-y-de-salud-familiar-el-42-de-ninos-y-ninas-de-6-a-35-meses-padece-anemia/
- 2. Fish is a great ally for preventing anaemia from 6 months of age [Internet]. [cited 2024 Jun 2]. Available from: https://www.gob.pe/institucion/minsa/noticias/27644-el-pescado-es-un-gran-aliado-para-prevenir-la-anemia-desde-los-6-meses-de-edad