

Enhancing Fresh Cheese with *Myrtus communis* L.: Nutritional and Sensory Innovations

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INTRODUCTION & AIM

Introduction

Myrtus communis L. has been traditionally used for its therapeutic properties, such as its high phenolic content, which includes flavonoids, anthocyanins, and tannins. This research explores the enrichment of fresh cheese with the plant's parts to enhance its nutritional and sensory properties.

Objective

To enrich fresh cheese with *Myrtus communis* L. fruit and leaves and evaluate its sensory attributes and potential nutritional enhancement.

METHOD

- Plant Material:** *Myrtus communis* L. fruits and leaves were collected and dried at 40°C. Powder was prepared for cheese enrichment.
- Cheese Enrichment:** Three cheese samples were produced:
 - Sample A:** Plain cheese (control)
 - Sample B:** Cheese with 0.5% *Myrtus* fruit powder
 - Sample C:** Cheese with 0.5% fruit and leaf powder
- Analyses Conducted:**
 - Phenolic Content:** Folin-Ciocalteu method used to measure total polyphenols, flavonoids, and tannins.
 - Antioxidant Activity:** Reducing power, DPPH, ABTS, and hydrogen peroxide scavenging assays.
 - Sensory Evaluation:** Panel of 34 naïve tasters evaluated cheese for color, odor, acidity, and texture.

RESULTS & DISCUSSION

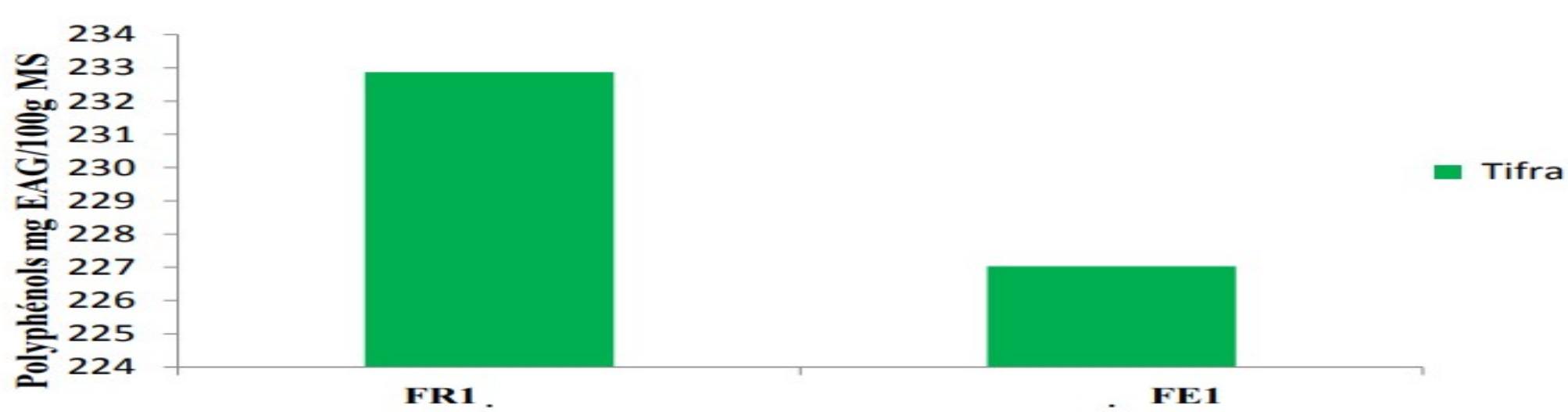


Figure 1: Total polyphenol content of extracts studied

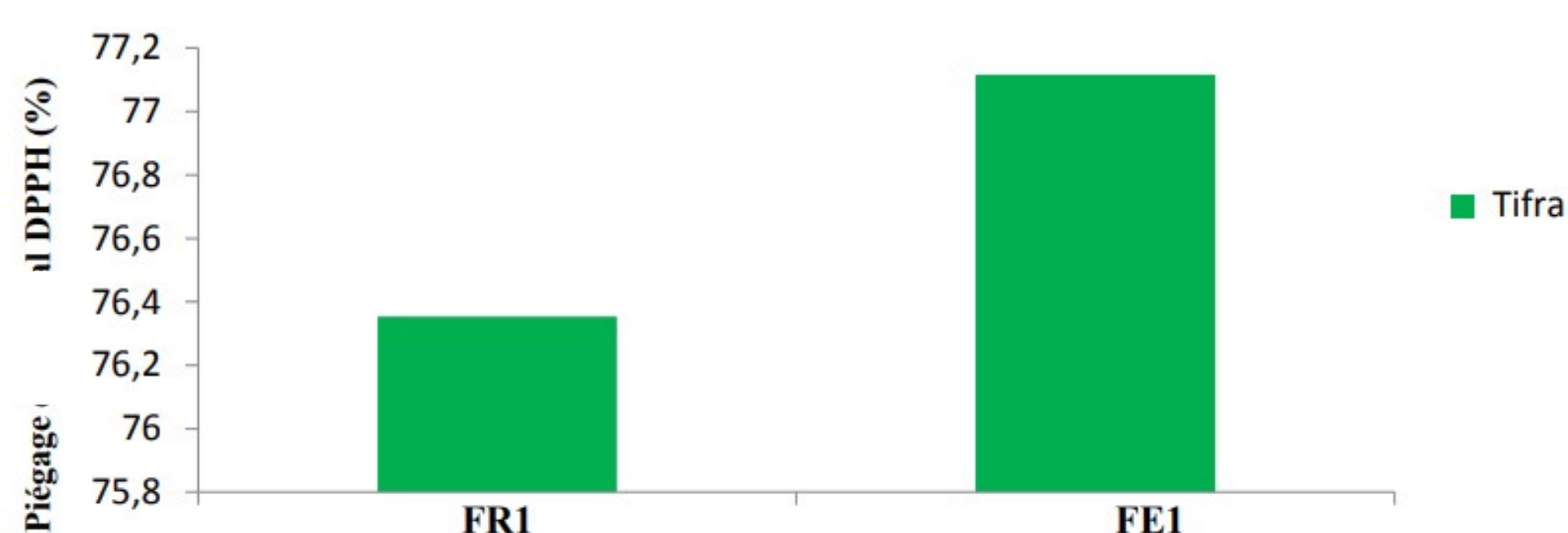


Figure 2: DPPH radical scavenging activity of the extracts studied.

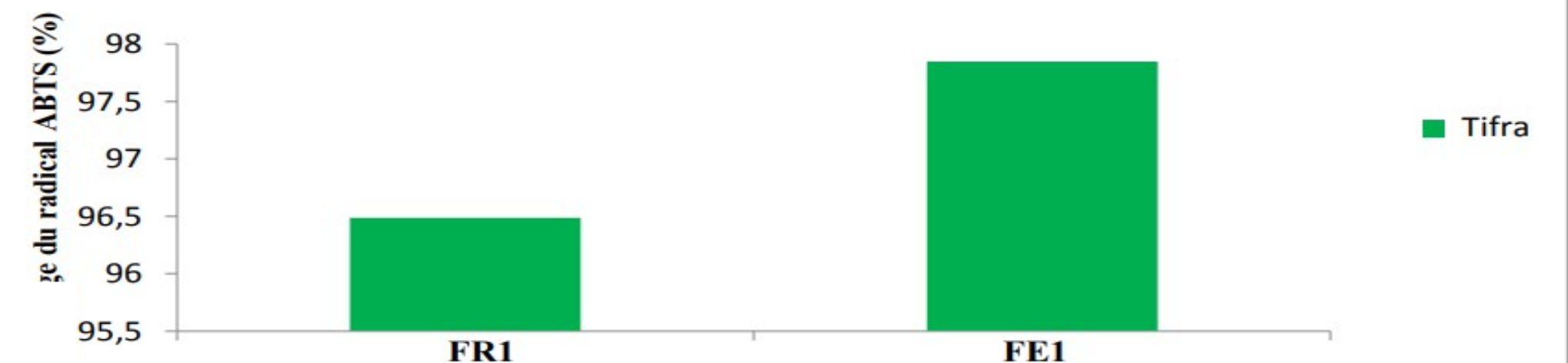


Figure 3: ABTS radical scavenging activity of the extracts studied.

Table 1: Sensory Attributes of Fresh Cheese Samples (A, B, C)

		Cheese A	Cheese B	Cheese C
Color	white	26/34 (76%)	25/34 (74%)	24/34 (71%)
	yellow	06/34 (18%)	06/34 (18%)	07/34 (21%)
	Pale yellow	02/34 (06%)	03/34 (09%)	03/34 (09%)
Odor	Strong	04/34 (12%)	05/34 (15%)	02/34 (5%)
	Medium	10/34 (29%)	27/34 (80%)	09/34 (25%)
	Low	20/34 (59%)	02/34 (05%)	24/34 (70%)
Acidity	Strong	19/34 (55%)	04/34 (12%)	13/34 (40%)
	Medium	15/34 (45%)	26/34 (76%)	18/34 (54%)
	Low	00/34 (0%)	04/34 (12%)	02/34 (6%)
Salty taste	Strong	04/34 (13%)	06/34 (18%)	07/34 (20%)
	Medium	25/34 (73%)	23/34 (68%)	21/34 (62%)
	Low	05/34 (14%)	05/34 (14%)	06/34 (18%)
Texture	Melting	25/34 (73%)	19/34 (56%)	16/34 (47%)
	Granular	04/34 (13%)	04/34 (12%)	02/34 (06%)
	Adhesive	05/34 (14%)	11/34 (32%)	16/34 (47%)

Results

1. Phenolic Content and Antioxidant Activity:

Higher phenolic content in the *Myrtus* fruit extracts (232.87 mg EAG/g MS). (figure 1) Flavonoids and tannins showed higher concentrations in the leaves.

Antioxidant assays (DPPH, ABTS) confirmed strong radical scavenging activities. (figure 2 and 3)

2. Sensory Analysis:

Cheese B (Fruit-enriched): Most appreciated for "medium odor" (80%) and balanced acidity (76%).

Cheese A (Plain): Highest score for "white paste" (76%), but less appreciated for "yellow paste."

Cheese C (Mixed powder): Moderate scores across all attributes. (table 1)

Discussion

- Enrichment with *Myrtus* parts, particularly the fruit, enhanced the sensory properties of the fresh cheese, specifically in odor and acidity.
- The phenolic content in *Myrtus* contributes to antioxidant activities, supporting its use as a functional food ingredient.
- Cheese enriched with *Myrtus* fruit (Sample B) was preferred by most tasters, showing potential for commercial use.

CONCLUSION

Incorporating *Myrtus communis* L. into fresh cheese improves both its nutritional and sensory profiles. This innovative approach leverages the antioxidant properties of *Myrtus*, offering a new variety of enriched cheese that appeals to consumers seeking plant-based health benefits.

FUTURE WORK / REFERENCES

Future work should optimize *Myrtus communis* powder enrichment in cheese and explore its sensory and health benefits.

References

- Bahorun (1997)
- Boizot & Charpentier (2006)
- Gülçin et al. (2002)