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Antioxidant Potential and Therapeutic Benefits of *Arbutus unedo*: Implications for Diet and Chronic Disease Management

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INTRODUCTION & AIM

Introduction:

Arbutus unedo, commonly known as the strawberry tree, is traditionally used for its medicinal benefits. The plant is recognized for its antioxidant properties, which may reduce the risk of chronic diseases such as cardiovascular disease and cancer. The focus of this study is on evaluating the antioxidant potential of Arbutus unedo extracts, comparing the effectiveness of different solvents.

Aim of the Study:

To assess the antioxidant activities and phenolic content of aqueous and ethanolic extracts of Arbutus unedo and to explore their implications in managing chronic diseases.

METHOD

1. Sample Preparation

Extracts were obtained from Arbutus unedo leaves using 30% and 100% ethanol.

2. Antioxidant Activity Assays

- **Total phenolics**: Measured using Folin-Ciocalteu reagent.
- **Flavonoids and Flavonols**: Quantified using standard methods.
- **DPPH Radical Scavenging**: Evaluated for antioxidant efficiency.
- **Inhibition of Linoleic Acid Peroxidation**: Measured as a marker of lipid oxidation.

3. Statistical Analysis

Data were statistically analyzed using ANOVA to determine significant differences in antioxidant activities between extracts.

RESULTS & DISCUSSION

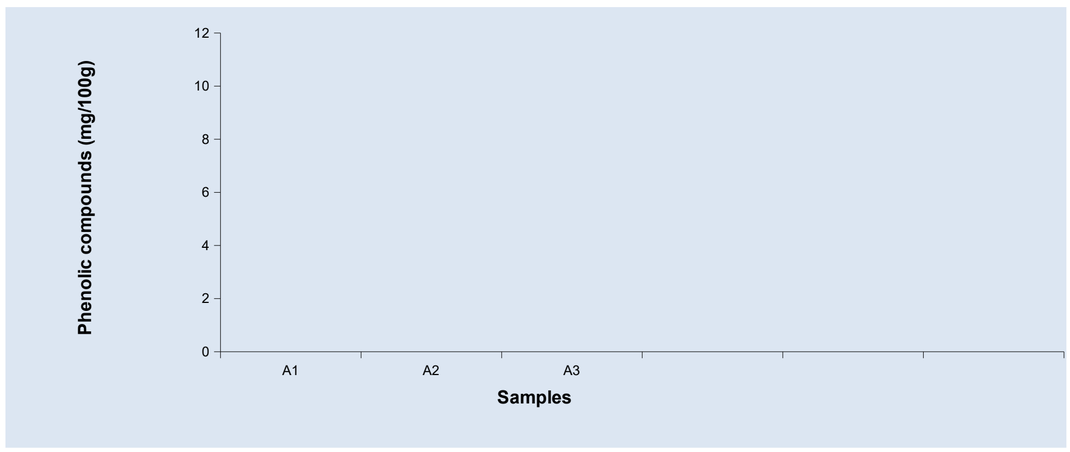

Figure 1: Phenolic compound content of fruit extracts

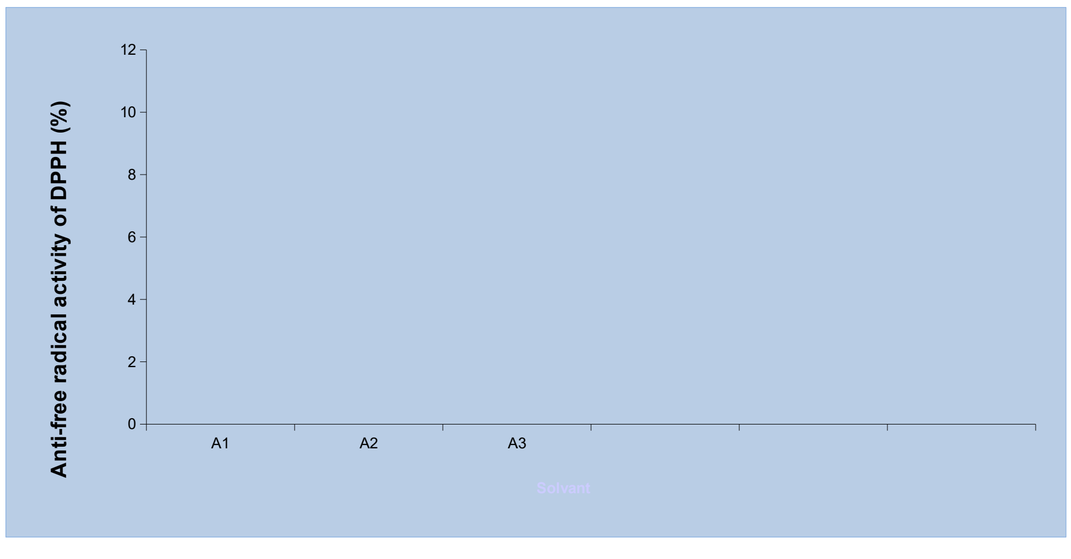

Figure 2: Anti-free radical activity of analyzed samples

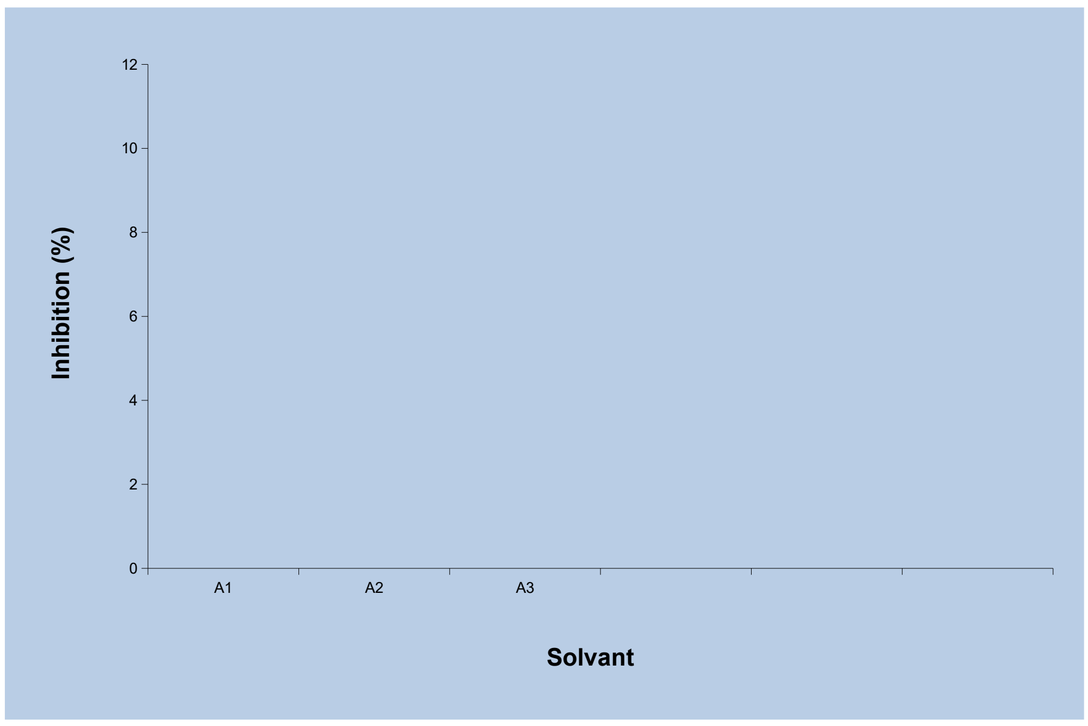

Figure 3: Inhibition of linoleic acid peroxidation by fruit extracts

- **Phenolic Content**: The highest total phenolic content was observed in 100% ethanol extracts (Figure 1).
- **Antioxidant Activity**: Both 30% and 100% ethanolic extracts showed high DPPH scavenging activity, with 100% ethanol demonstrating superior effectiveness (Figure 2). The results indicate that the solvent type plays a significant role in maximizing antioxidant extraction.
- **Lipid Peroxidation Inhibition**: The ethanolic extracts displayed notable inhibition of linoleic acid peroxidation, further demonstrating their potential in managing oxidative stress-related diseases. (Figure 3)

CONCLUSION

Arbutus unedo possesses significant antioxidant properties, primarily due to its high phenolic content. The findings support its traditional use in herbal medicine for treating oxidative stress-related disorders. Future research should explore the isolation of specific bioactive compounds and their therapeutic applications.

FUTURE WORK / REFERENCES

Future Work:

- **Isolation of Key Bioactive Compounds**
- **Mechanistic Studies on Antioxidant Actions**
- **Clinical Trials to Test Efficacy in Disease Prevention**

References:

1. Zhao, 2007.
2. Pallauf et al., 2008.
3. Özcan and Haciseferogullari, 2007.