

Introduction

Plant-based simulated meat is a good choice to replace the traditional animal protein, which has some problems such as relatively low production efficiency, unfavorable to human health, environmental pressure, animal welfare and so on. In recent years, plant-based simulated meat has a good market prospect. The market of plant-based simulated meat is expected to grow from \$4.6 billion in 2018 to \$30.9 billion in 2026, showing strong growth momentum and good market potential. Therefore, it is of positive significance to develop a variety of plant-based simulated meat products with rich functions.

Methods

In this study, mulberry leaf powder was used as an additive to co-extrude with soybean protein isolate and wheat gluten to explore the effects of mulberry leaf powder content on the apparent properties and structural characteristics of plant-based simulated meat. At the same time, raw materials containing different moisture were used to explore the related effects of extrusion under different moisture. Finally, the material, extruded product and cooling area product were used for texture analysis.

Results & Discussion

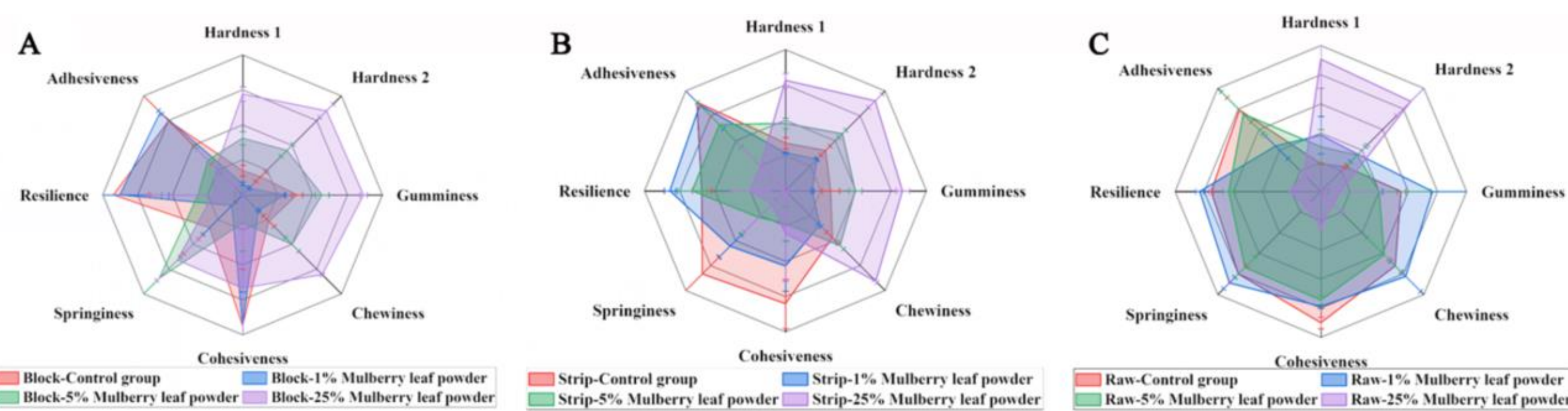


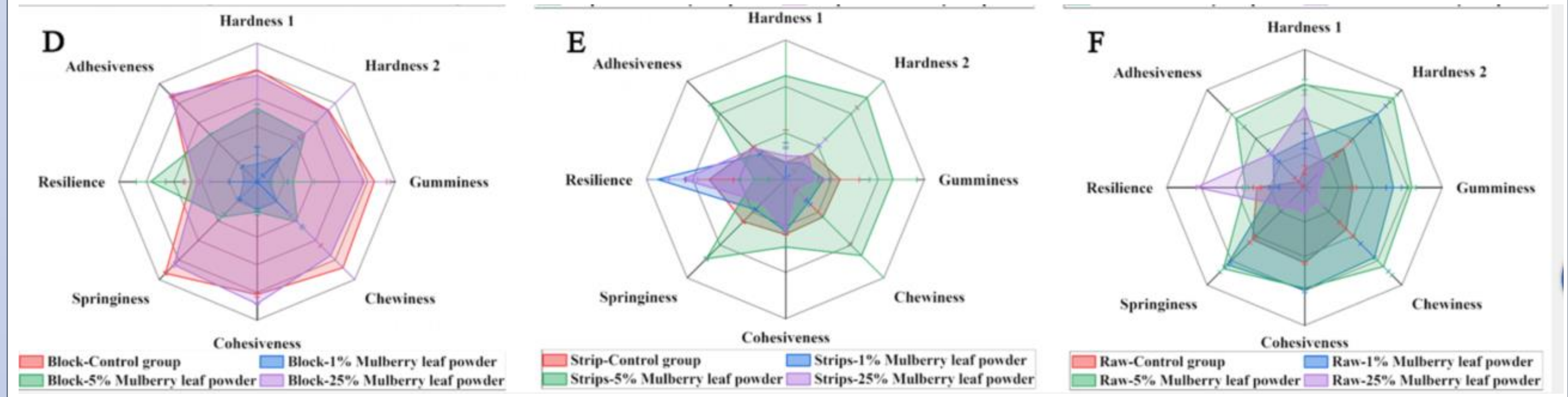
Fig.1 The textures of different plant-based simulated meat products prepared with different formulas (A) Block products with different mulberry leaf powder additions under 60% water content. (B) Strip products with different mulberry leaf powder additions under 60% water content. (C) Raw products with different mulberry leaf powder additions under 60% water content.

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References

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(D) Block products with different mulberry leaf powder additions under 50% water content. (E) Strip products with different mulberry leaf powder additions under 50% water content. (F) Raw products with different mulberry leaf powder additions under 50% water content.

Fig.2 The apparent form of different plant-based simulated meat products prepared with 50% water content formulas. Mulberry leaf addition (from left to right): 0, 1%, 5%, 25%..



(A) Block products with different mulberry leaf powder additions. (B) Strip products with different mulberry leaf powder additions. (C) Raw products with different mulberry leaf powder additions

Conclusion

In summary, the addition of mulberry leaf powder has a positive effect on the texture characteristics of plant-based simulated meat, so that a variety of plant-based simulated meat products with different functions can be developed. Further studies are needed to evaluate the nutritivity of mulberry leaf powder.