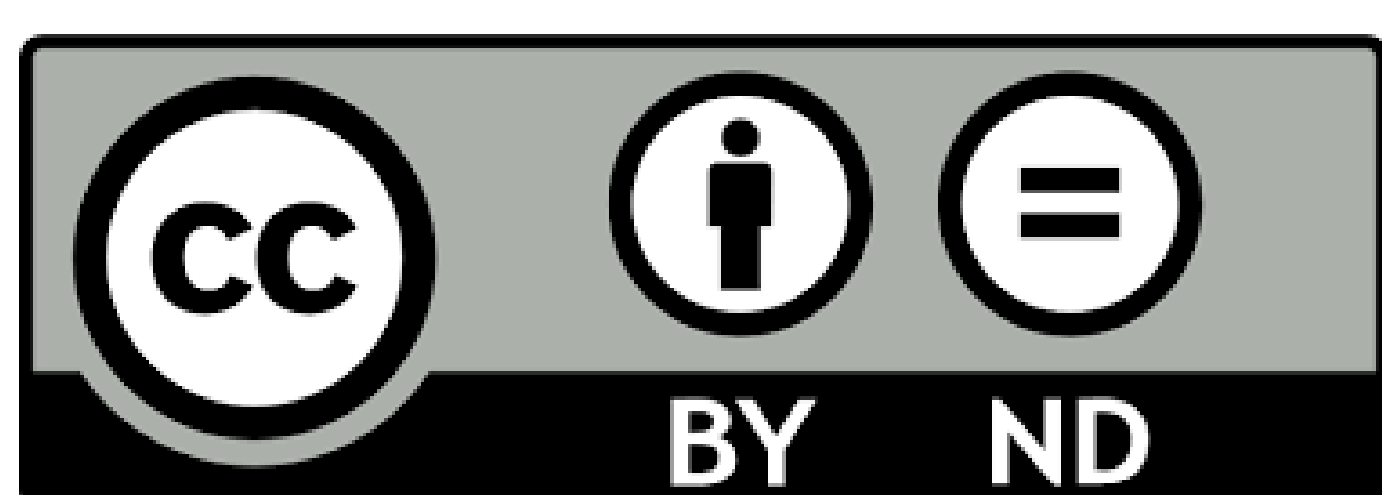




INFOGRAPHIC

NGHIÊN CỨU PHÁT TRIỂN SỮA GẠO LỨT TÍM BỔ SUNG BỘT DÂU TẦM (MORUS ALBA L.) NHẪM TĂNG CƯỜNG HOẠT TÍNH CHỐNG OXY HÓA

Tác giả: Phan Thị Thu Hạ
Đơn vị: Khoa Khoa học Ứng dụng & Công nghệ
Năm xuất bản: 2026



Nghiên cứu phát triển sữa gạo lứt tím bổ sung bột dâu tằm (Morus alba L.) nhằm tăng cường hoạt tính chống oxy hóa © 2026 bởi **Phan Thị Thu Hạ** được cấp phép theo **CC BY-ND 4.0**.

DEVELOPMENT OF PURPLE BROWN RICE MILK SUPPLEMENTED WITH MULBERRY POWDER (*Morus alba* L.) TO ENHANCE ANTIOXIDANT ACTIVITY

Abstract

This study evaluated the effects of mulberry powder supplementation (0–2.5%, w/v) on the quality and antioxidant activity of purple brown rice milk. The results showed that the addition of mulberry powder increased the °Brix, anthocyanin content, total phenolic content (TPC) and DPPH radical-scavenging activity, while imparting a characteristic red–purple color to the product. A supplementation level of 2% was determined to be appropriate, contributing to the enhancement of the nutritional value and bioactive properties of the product.

Results

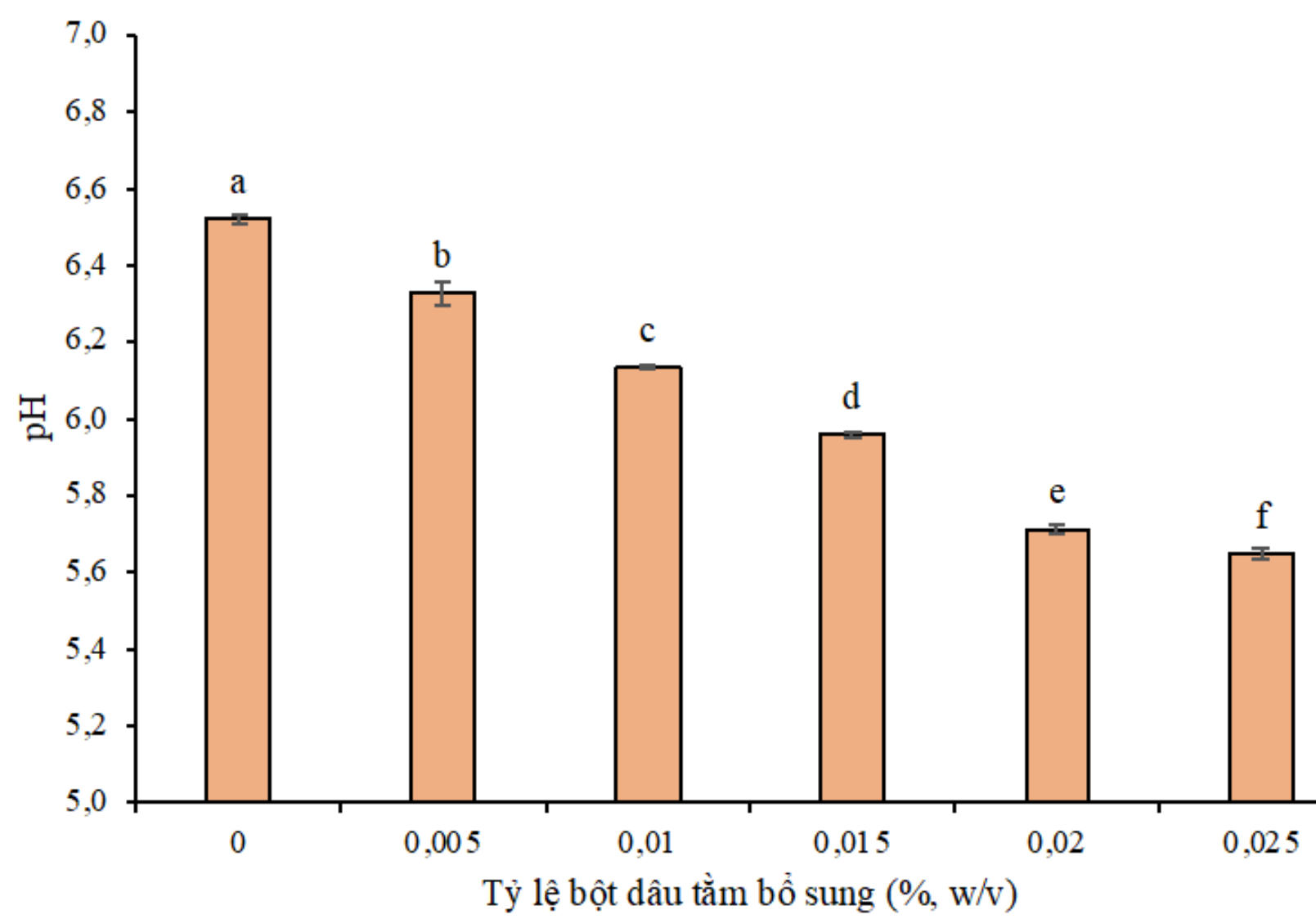
Color

Sample	L	a	b
Control	29,080 ± 0,087	3,243 ± 0,047	-0,200 ± 0,017
0,5%	28,213 ± 0,006	3,907 ± 0,031	-0,330 ± 0,010
1%	27,223 ± 0,015	4,537 ± 0,035	-0,263 ± 0,023
1,5%	24,193 ± 0,006	3,400 ± 0,017	-0,287 ± 0,029
2%	25,313 ± 0,006	5,053 ± 0,035	-0,157 ± 0,015
2,5%	23,380 ± 0,017	4,003 ± 0,031	-0,307 ± 0,015

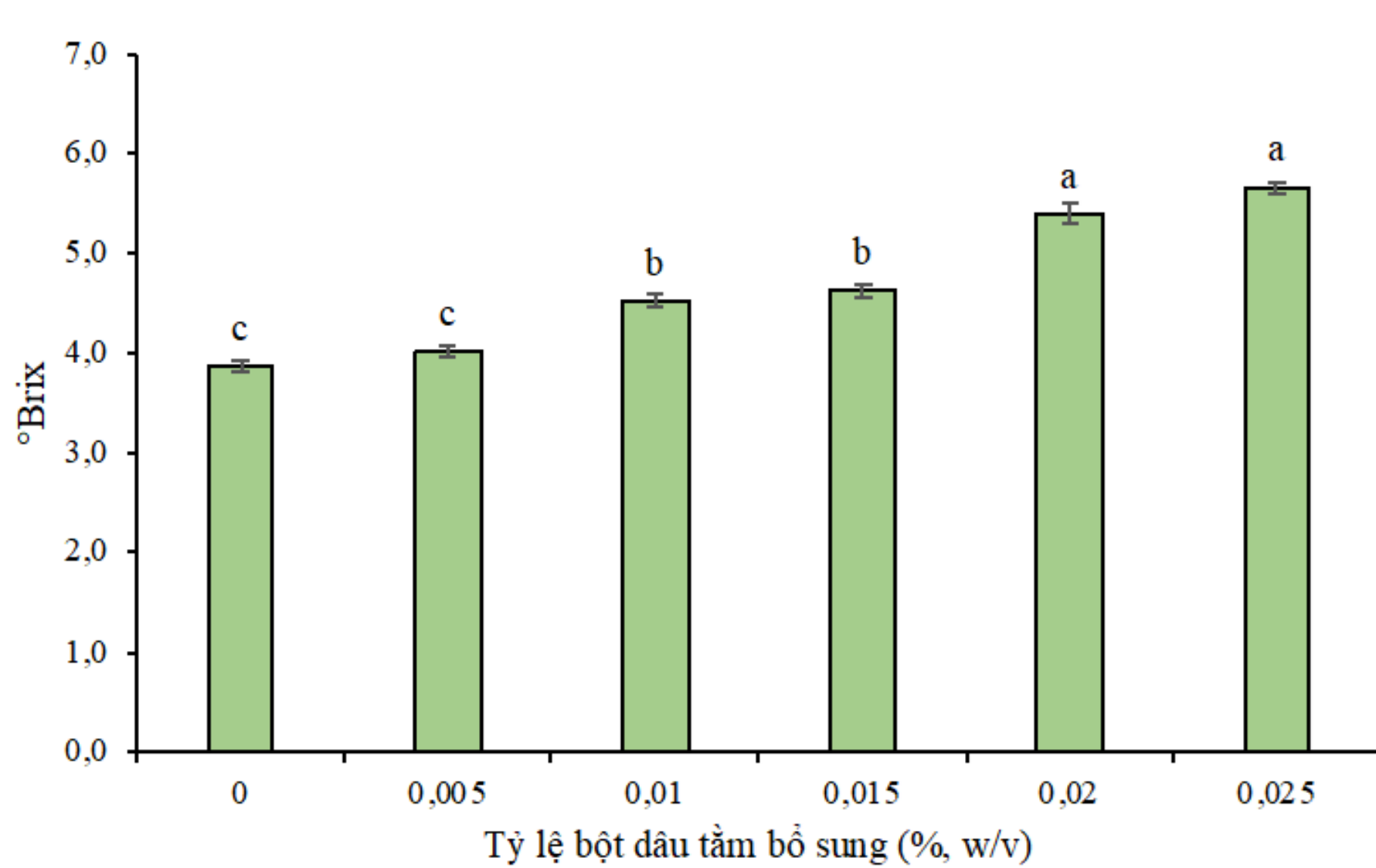
Particle Size

Sample	D10	D50	D90
Control	880, 635 ± 24,996	2130,26 ± 36,077	5003,625 ± 38,148
0,5%	3266,52 ± 113,024	6411,995 ± 116,708	9233,86 ± 37,547
1%	1539,565 ± 71,439	3661,7 ± 176,338	7493,555 ± 224, 075
1,5%	2532,4 ± 38,297	5511,135 ± 52,644	8889,705 ± 21,659
2%	1255,925 ± 66,107	2975,42 ± 136,245	6513,055 ± 187,800
2,5%	3528,9 ± 383,924	6381,51 ± 426,117	9215,49 ± 144,009

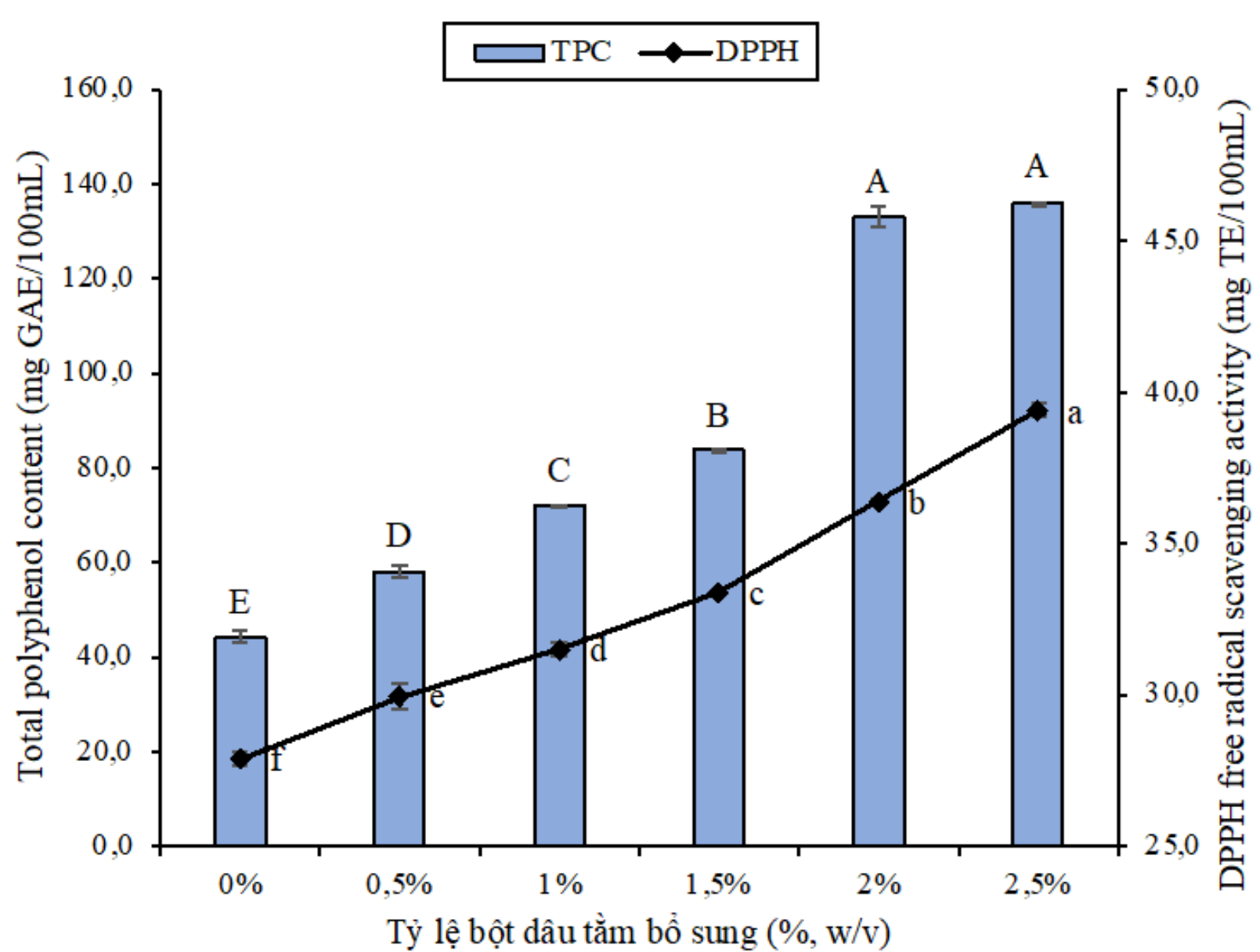
pH



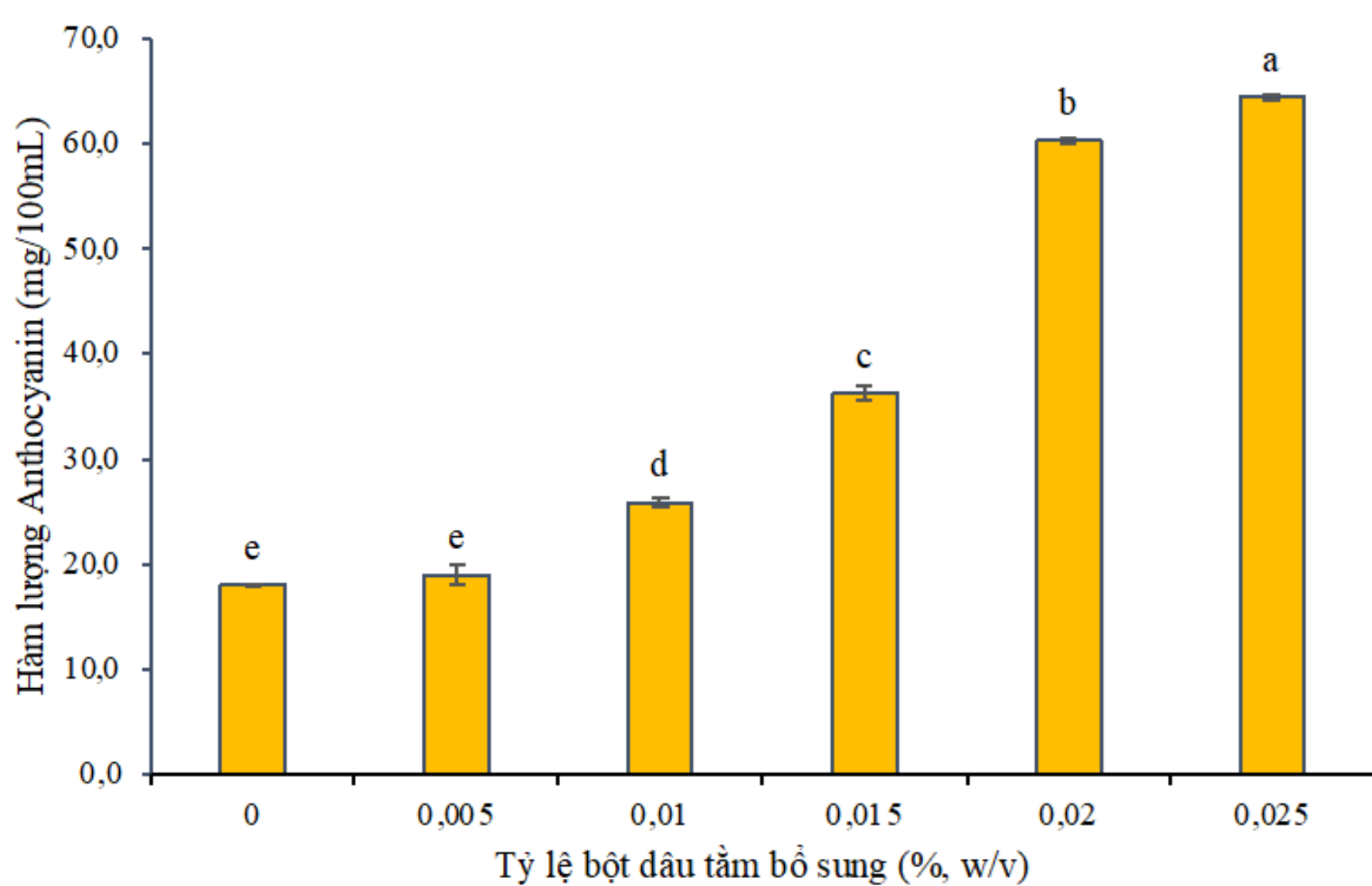
Total Soluble Solids (°Brix)



Total Phenolic Content (TPC) and DPPH Radical-Scavenging Activity



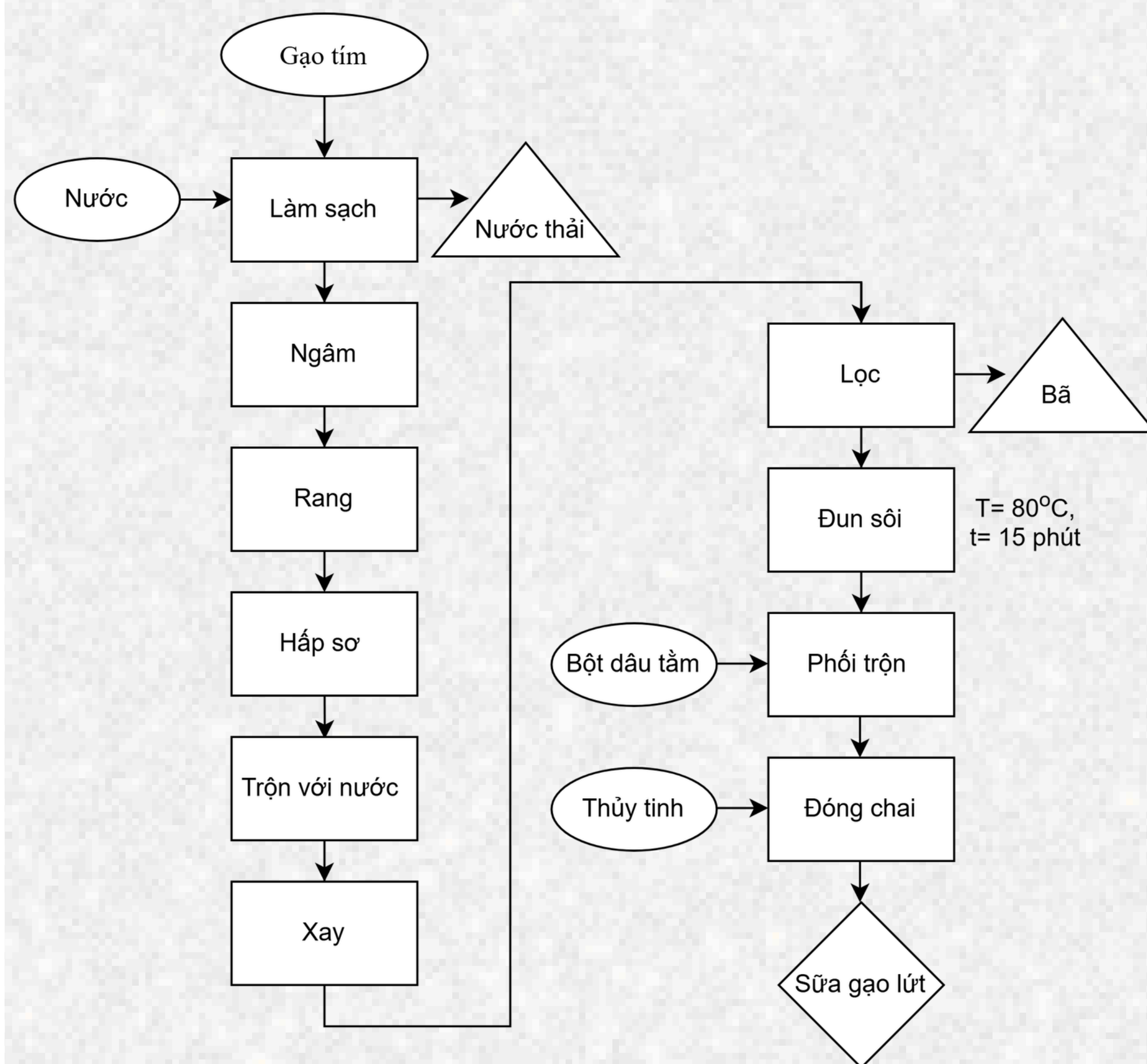
Anthocyanin Content



Materials

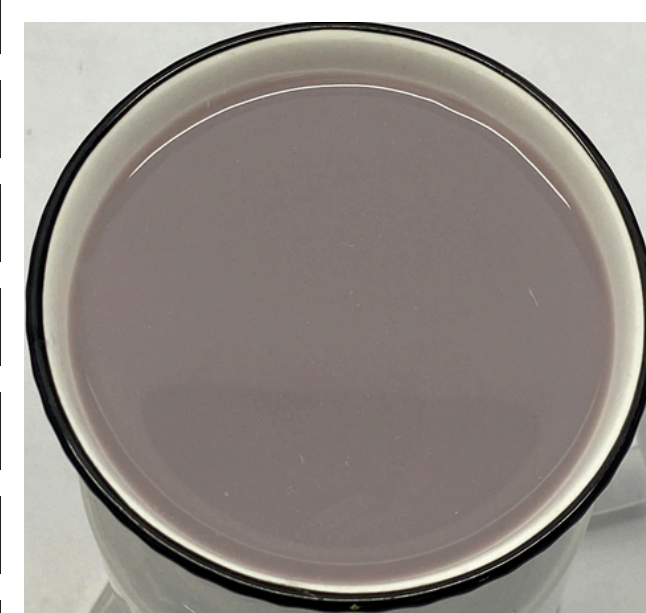


Technological Process



Mulberry Powder Supplementation Level (%)

Control



0,5%



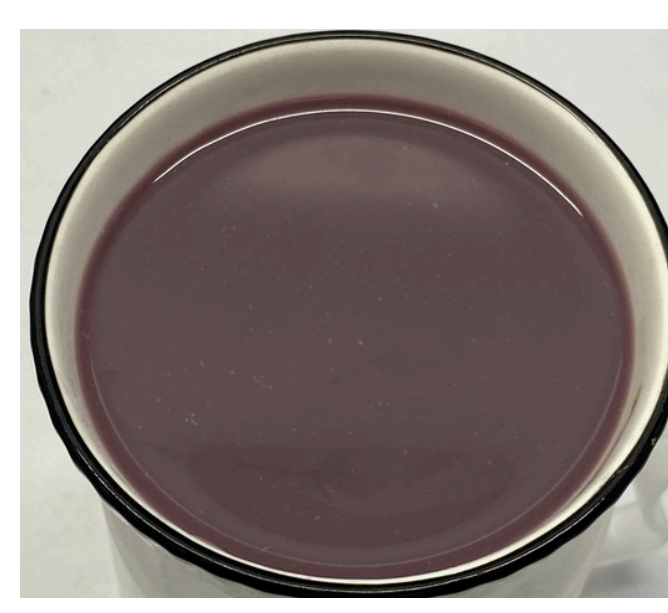
1%



1,5%



2%



2,5%



Conclusion: Mulberry powder has the potential to enhance the value of purple brown rice milk by improving its nutritional value, color, and antioxidant activity. Among the supplementation levels investigated, 2% was identified as the most appropriate level, as it maintained good dispersion and achieved high values of TPC, DPPH radical-scavenging activity, and anthocyanin content. Increasing the supplementation level to 2.5% did not result in a significant improvement in bioactive properties; therefore, 2% was considered an appropriate supplementation level within the scope of this study.