



INFOGRAPHIC

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Tác giả:

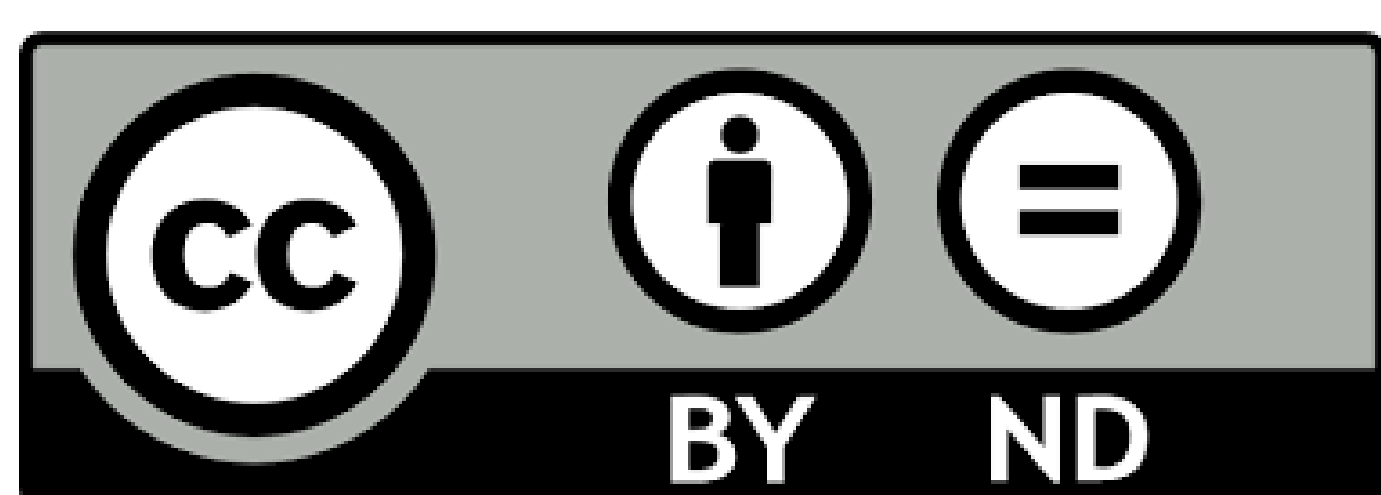
Lê Thị Mai Trinh

Đơn vị:

Khoa Khoa học Ứng dụng & Công nghệ

Năm xuất bản:

2026



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Evaluation Of The Effects Of Pretreatment And Preservation Methods On Bird's Eye Chili Powder

1. RATIONALE

Bird's eye chili is rich in bioactive compounds but degrades quickly post-harvest due to high moisture. Therefore, optimizing pre-treatment and storage is crucial to preserve chili powder quality.

2. RESEARCH OBJECTIVES

Optimize pretreatment parameters (soaking agents, time, sequence) and evaluate chili powder quality changes during two months of storage.

3. SCOPE OF STUDY

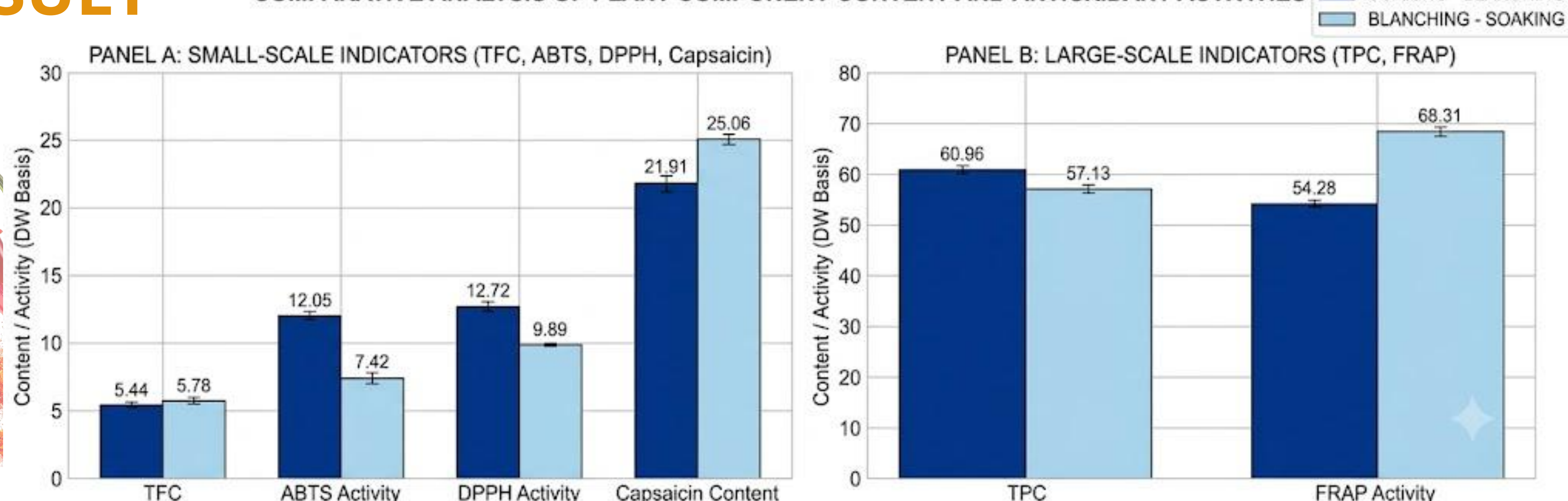
- Raw material: Ripe bird's eye chili (*Capsicum frutescens*)
- Scale: Laboratory scale
- Soaking agents: Sodium metabisulfite, ascorbic acid, citric acid, and calcium chloride.
- Storage duration: 2 months
- Packaging: Silver-coated zip-lock bags / Paper bags with silver lining
- Analysis: Physicochemical properties and in vitro antioxidant capacity; no animal studies were conducted.

4. RESEARCH METHODS

- Pre-treatment: Comparison of soaking agents, concentrations, soaking times (10–30 min, 1:5 w/v ratio), and process sequences (Soaking ↔ Blanching: 95°C/30 s).
- Drying & Powderization: Freeze-drying (target moisture content: 8–9%), grinding & sieving ($\leq 500 \mu\text{m}$).
- Storage: 20–50°C, weekly sampling for 2 months.
- Data Analysis: Excel & SPSS (Mean $\pm$ SD, ANOVA with Duncan or Tukey test, $p < 0.05$).

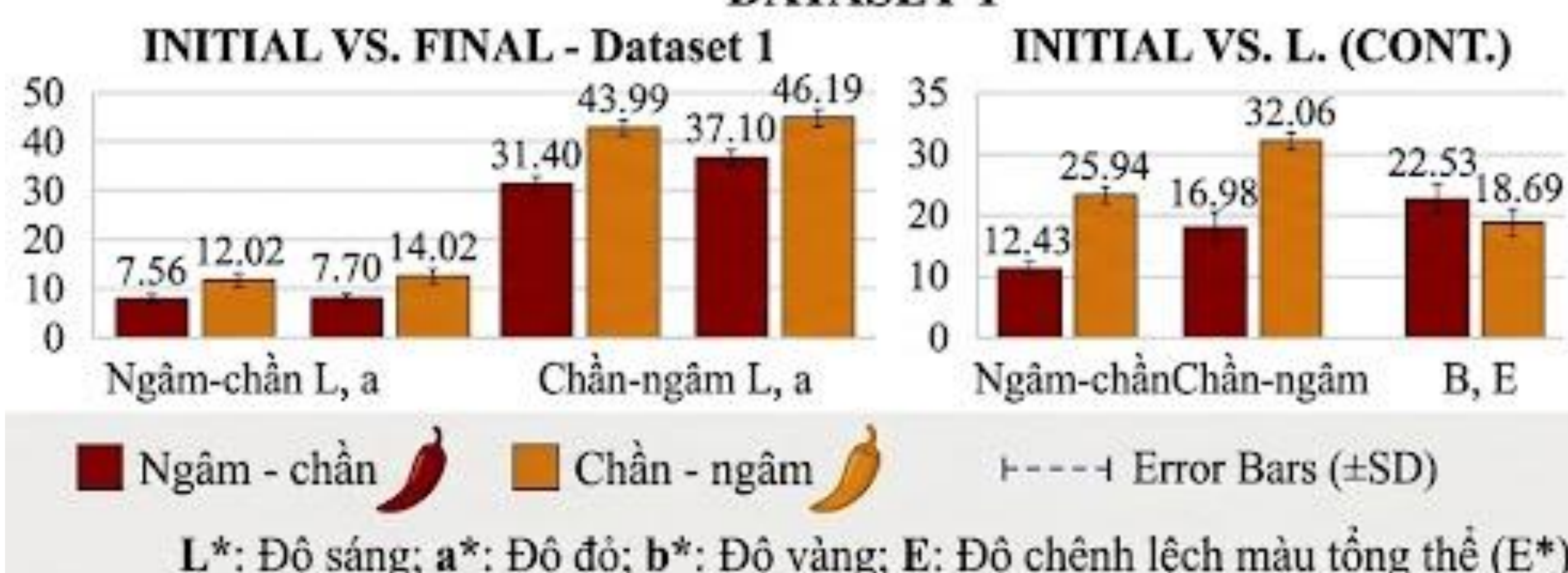
5. RESULT

COMPARATIVE ANALYSIS OF PLANT COMPONENT CONTENT AND ANTIOXIDANT ACTIVITIES

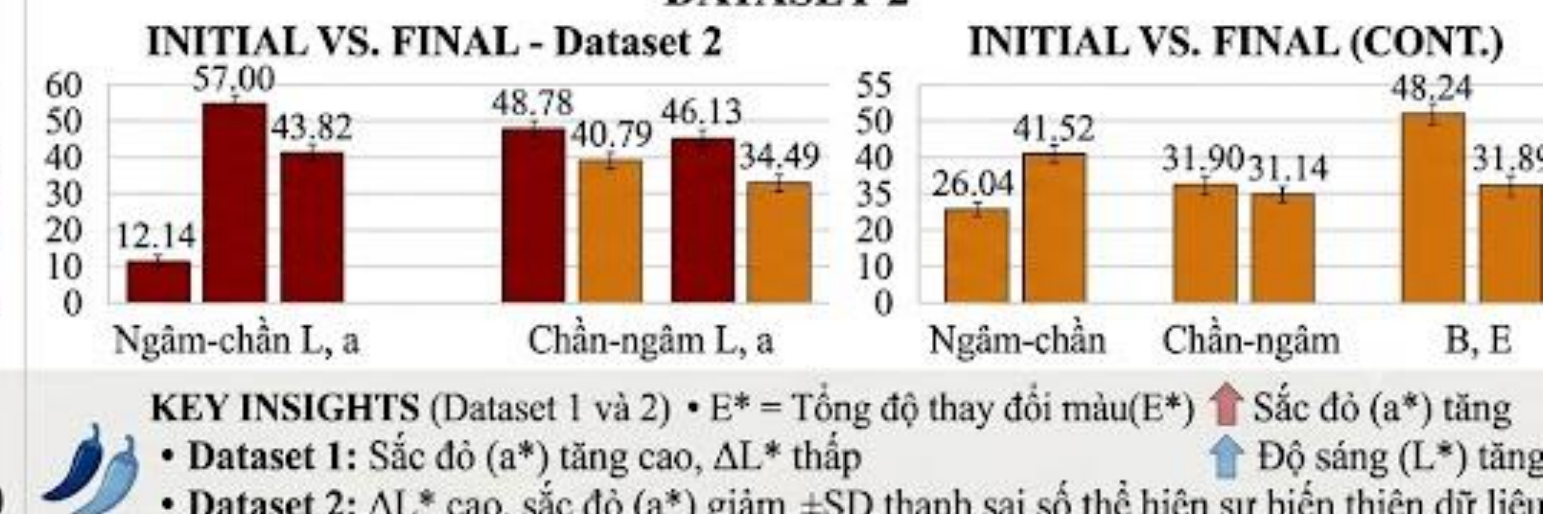


COMPARATIVE ANALYSIS OF CIELAB COLOR PARAMETERS (CHILI PROCESSING)

DATASET 1



DATASET 2



KEY INSIGHTS (Dataset 1 và 2) • E* = Tổng độ thay đổi màu (E*) ↑ Sắc độ (a*) tăng
• Dataset 1: Sắc độ (a*) tăng cao, ΔL^* thấp
• Dataset 2: ΔL^* cao, sắc độ (a*) giảm $\pm$ SD thanh sai số thể hiện sự biến thiên dữ liệu