

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh parameter lingkungan terhadap kualitas bunga garam (*fleur de sel*) yang diproduksi menggunakan dua teknologi berbeda, yaitu Tunnel dan Flow Down System (FDS), dengan air bahan baku salinitas tinggi. Parameter lingkungan yang diamati meliputi suhu air, suhu udara, kelembapan, intensitas cahaya, ketinggian air, derajat Baumé (°Be), dan laju evaporasi. Pengumpulan data dilakukan selama 23 hari, dan pengujian laboratorium dilakukan terhadap 24 sampel untuk menganalisis kadar air dan kandungan NaCl menggunakan metode SNI. Hasil penelitian menunjukkan bahwa teknologi FDS lebih unggul dalam menjaga kestabilan suhu dan kelembapan, serta menghasilkan proses kristalisasi yang lebih optimal. Nilai kadar NaCl tertinggi diperoleh sebesar 97,26% pada prototipe FDS, sedangkan kadar air terendah sebesar 2,13% juga ditemukan pada prototipe FDS. Uji ANOVA menunjukkan nilai signifikansi $< 0,001$, yang menandakan adanya perbedaan nyata antara kedua metode terhadap parameter kualitas garam. Selain itu, korelasi Pearson menunjukkan hubungan yang signifikan antara suhu air dan intensitas cahaya terhadap pembentukan kristal bunga garam. Temuan ini membuktikan bahwa kontrol terhadap parameter lingkungan memiliki pengaruh besar terhadap kualitas bunga garam, dan penggunaan sistem FDS memberikan hasil yang lebih stabil dan berkualitas tinggi dibanding metode tunnel.

Kata Kunci : bunga garam, salinitas tinggi, parameter lingkungan, metode tunnel, *Flow Down System* (FDS), kadar NaCl, kadar air, derajat Baumé, kristalisasi, evaporasi.

ABSTRAK

This study aims to analyze the influence of environmental parameters on the quality of fleur de sel produced using two different technologies: Tunnel and Flow Down System (FDS), utilizing high-salinity brine as raw material. The observed environmental parameters include water temperature, air temperature, humidity, light intensity, water height, Baumé degree (°Be), and evaporation rate. Data were collected over a period of 23 days, and laboratory analysis was conducted on 24 samples to determine moisture and NaCl content based on the Indonesian National Standard (SNI) methods. The results showed that the FDS technology performed better in maintaining environmental stability, especially in terms of temperature and humidity, thereby supporting a more optimal crystallization process. The highest NaCl content was recorded at **97.26%**, and the lowest moisture content at **2.13%**, both obtained from the FDS prototype. ANOVA tests yielded a significance value of **< 0.001**, indicating statistically significant differences between the two methods regarding salt quality parameters. Additionally, Pearson correlation analysis revealed significant relationships between water temperature and light intensity with the formation of fleur de sel crystals. These findings confirm that environmental control plays a crucial role in determining salt quality, and the FDS system provides more consistent and higher-quality results compared to the Tunnel method.

Keywords: fleur de sel, high salinity, environmental parameters, tunnel method, Flow Down System (FDS), NaCl content, moisture content, Baumé degree, crystallization, evaporation.