



## **KARAKTERISTIK KEJU *MOZZARELLA* DENGAN KOAGULAN EKSTRAK BUAH KIW (*Actinidia deliciosa*)**

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### **INTISARI**

Pembuatan keju erat kaitannya dengan peran koagulan susu sehingga diperoleh *curd*. Pemuluran (*stretching*) merupakan tahapan proses yang mencirikan pada produksi keju *mozzarella*. Penelitian ini bertujuan untuk mengetahui karakteristik mikrobiologis, fisikokimia, dan sensoris keju *mozzarella* yang dihasilkan dengan koagulan ekstrak buah kiwi. Perlakuan penelitian ini meliputi keju dengan penggunaan koagulan *rennet* komersial (P0), keju dengan koagulan ekstrak buah kiwi 2% (P1), dan ekstrak buah kiwi 4% (P2) dengan starter *Lactocaseibacillus paracasei*. Masing-masing perlakuan dilakukan pengulangan sebanyak tiga kali. Pengujian yang dilakukan adalah uji mikrobiologis (total BAL), rendemen, tekstur (*hardness, cohesiveness, chewiness, gumminess, springiness, dan resilience*), kadar air, nilai pH, keasaman, dan sensoris (warna, aroma, tekstur, rasa, dan *overall* kesukaan). Data yang diperoleh dianalisis menggunakan *one-way ANOVA* dan dilanjutkan uji *Duncan Multiple Range Test* (DMRT) pada hasil uji kualitas mikrobiologis dan fisikokimia keju yang menunjukkan pengaruh nyata. Sementara itu, analisis data kualitas sensoris dilakukan dengan uji *Kruskall-Wallis* lalu dilanjutkan dengan *Mann-Whitney Test* pada hasil uji kualitas sensoris keju yang menunjukkan pengaruh nyata. Hasil penelitian menunjukkan bahwa penggunaan koagulan yang berbeda tidak berpengaruh terhadap rendemen *curd*, kualitas mikrobiologis, dan tekstur fisik keju *mozzarella*, tetapi berpengaruh nyata terhadap nilai pH dan keasaman keju *mozzarella*. Nilai pH keju dengan koagulan *rennet* komersial, ekstrak buah kiwi 2%, dan 4% berturut-turut adalah  $6,30 \pm 0,07$ ;  $6,09 \pm 0,10$ ; dan  $5,99 \pm 0,05$  dan keasaman keju *mozzarella* berturut-turut sebesar  $0,25 \pm 0,03$ ;  $0,44 \pm 0,09$ ; dan  $0,59 \pm 0,19\%$ . Koagulan berpengaruh signifikan terhadap kualitas sensoris tekstur, aroma, dan rasa, tetapi tidak berpengaruh terhadap warna dan *overall* kesukaan keju *mozzarella*. Kesimpulannya, koagulan ekstrak buah kiwi dapat digunakan sebagai substitusi *rennet* komersial dan level yang baik digunakan sebagai koagulan adalah 4% ekstrak buah kiwi.

**Kata kunci:** Kualitas keju *mozzarella*, buah kiwi, *rennet*



## **CHARACTERISTICS OF MOZZARELLA CHEESE WITH COAGULANT OF KIWI EXTRACT (*Actinidia deliciosa*)**

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### **ABSTRACT**

The production of cheese is closely related to the role of milk coagulants in obtaining curds. Stretching is a characteristic stage in the production of mozzarella cheese. The objective of this study is to determine the microbiological, physicochemical, and sensory characteristics of mozzarella cheese produced using milk coagulants in the form of kiwi fruit extract. The experimental treatments included cheese made with commercial rennet (P0) and cheese made with 2% (P1) and 4% kiwi fruit extract (P2) with *Lactocaseibacillus paracasei* starter. Each treatment was repeated three times. Tests included microbiological analysis (total plate count), yield, texture (hardness, cohesiveness, chewiness, gumminess, springiness, and resilience), moisture content, pH, acidity, and sensory (color, aroma, texture, taste, and overall preference). The data were analyzed using one-way ANOVA, followed by a Duncan's Multiple Range Test (DMRT) on the results of the microbiological and physicochemical quality tests of the cheese, which showed significant effects. Meanwhile, the analysis of sensory quality data was conducted using the Kruskal-Wallis test, followed by the Mann-Whitney test on the results of the sensory quality tests for the cheese, which showed significant effects. The results showed that the use of different coagulants did not affect the curd yield, microbiological quality, and physical texture of mozzarella cheese, but had a significant effect on the pH and acidity of mozzarella cheese. The pH values of cheese made with a commercial rennet coagulant, 2% kiwi fruit extract, and 4% kiwi fruit extract were  $6.30 \pm 0.07$ ,  $6.09 \pm 0.10$ , and  $5.99 \pm 0.05$ , respectively, and the acidity of mozzarella cheese was  $0.25 \pm 0.03$ ,  $0.44 \pm 0.09$ , and  $0.59 \pm 0.19\%$ , respectively. The coagulant significantly affected the sensory quality of texture, aroma, and taste, but did not affect the color and overall preference of mozzarella cheese. In conclusion, kiwi fruit extract coagulant can be used as a substitute for commercial rennet, and the optimal level for use as a coagulant is 4% kiwi fruit extract.

**Keywords:** Mozzarella cheese quality, kiwi fruit, rennet