

MODIFIKASI *CONTINUOUS TYPE STEAM JET AGGLOMERATOR*
UNTUK PENGOLAHAN BUBUK KAKAO INSTAN
DAN KARAKTERISASI KUALITAS FISIK PRODUK

ABSTRAK

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Popularitas minuman berbasis kakao telah berkembang sejak lama di negara-negara tropis. Minuman coklat dingin sangat diminati oleh konsumen karena faktanya suhu di daerah tropis relatif tinggi. Kondisi ini merangsang industri minuman kakao untuk terus meningkatkan kualitas produk mereka. Penelitian ini mengkaji kinerja desain proses *continuous-type steam jet agglomerator* skala rumah tangga yang digunakan untuk memproduksi bubuk kakao instan. Mesin ini dirancang untuk meningkatkan kelarutan bubuk kakao, sehingga bubuk kakao akan mudah dilarutkan dalam air dingin. Dalam penelitian ini, *continuous-type steam jet agglomerator* diproduksi dalam skala rumah tangga. Variasi perlakuan yang diberikan meliputi perbedaan suhu pengeringan (60°C, 80°C, dan 100°C), ulangan putaran agglomerasi (1 putaran, 2 putaran, 3 putaran), serta bukaan kran pada mesin *steam jet agglomerasi* (bukaan kran 1,2 bukaan kran 1,3 bukaan 2,3 dan bukaan 1,2,3). Hasil penelitian menunjukkan bahwa suhu pengering, jumlah ulangan agglomerasi, bukaan kran dan interaksinya mempengaruhi sifat fisik, sifat alir, dan sifat instan pada bubuk kakao jika dibandingkan dengan minuman coklat kontrol, minuman coklat instan memiliki nilai kelarutan lebih tinggi (36-41 %), dispersibilitas lebih rendah (1,1-2,8%), dan ukuran partikel yang lebih besar (mm)

Kata kunci: bubuk kakao, *continuous-type steam jet agglomerator*, minuman coklat instan

MODIFICATION OF *CONTINUOUS-TYPE STEAM JET AGGLOMERATOR*
FOR PROCESSING INSTANT COCOA BEVERAGES
AND PHYSICAL QUALITY CHARACTERIZATION OF THE PRODUCTS

ABSTRACT

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The popularity of cacao-based drinks has been developing for a long time in tropical countries. Cold chocolate drinks are highly demanded by consumers because of the fact that temperatures in the tropics are relatively high. This condition stimulates the cocoa beverage industry to continue improving the quality of their products. This study examined the performance of a small scale continuous-type steam jet agglomerator used to produce instant cocoa powder. This machine is designed to increase the solubility of cocoa powder, so that cocoa powder will be easily dissolved in cold water. In this study, continuous-type steam jet agglomerator was produced on a household scale. Drying temperature (60°C, 80°C, and 100°C), cycle of agglomeration process (1 cycle , 2 cycle, 3 cycle), and outlet valve position of the steam jet machines used (1.2; 1.3; 2,3 and 1,2,3) were used as research variables. The results showed that the drying temperature, the cycle of agglomeration process, outlet valve position of the steam jet machines and their interactions affected the physical properties, flow characteristics, and instant properties of cocoa powder. Compared to the references, instant chocolate drinks had a higher solubility value (36-41%), lower dispersibility (1.1-2.8%), and larger particle size (mm)

Keyword : cocoa powder, steam jet agglomerator, instant cocoa beverage