

**SIFAT FISIK BUBUK MINUMAN KAKAO INSTAN YANG DIPROSES
MENGUNAKAN *BATCH-TYPE STEAM JET AGGLOMERATOR*
DENGAN PERLAKUAN KETINGGIAN RAK, KETEBALAN BAHAN,
DAN DURASI PEMBERIAN *STEAM***

INTISARI

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Peluang pasar kakao sangat terbuka baik di dalam negeri maupun untuk ekspor di Indonesia. Minuman kakao merupakan salah satu produk yang paling digemari dan diminati oleh masyarakat Indonesia. Hasil yang biasa didapatkan dalam pembuatan minuman kakao adalah adanya endapan padatan bubuk kakao. Adanya endapan tersebut menunjukkan bahwa sifat instan dari minuman kakao yang belum optimum. *Steam jet agglomeration* merupakan alternatif proses yang lebih efisien dan sederhana untuk industri kecil dan menengah karena proses dan kondisi pengoperasian yang lebih mudah (*user friendly*). Penelitian ini bertujuan untuk mengkaji pengaruh penggunaan *batch-type steam jet agglomerator* terhadap karakteristik fisik, instan dan alir bubuk kakao instan yang dihasilkan setelah melalui proses aglomerasi termal dengan pengaruh perlakuan berupa ketinggian rak (atas, tengah, bawah), ketebalan bahan (0.5, 1, dan 1.25 cm), dan durasi pemberian *steam* (1, 3 dan 5 menit).

Dari beberapa karakteristik bubuk kakao instan apabila dibandingkan dengan bahan kontrol (tanpa dikenai *steam*) nilai solubilitas bubuk kakao teraglomerasi meningkat sebesar 27,44%-32,71% dengan nilai solubilitas bahan kontrol 26,84%. Selain itu nilai dispersibilitas bubuk kakao setelah aglomerasi lebih tinggi dengan rentang nilai 6,06%-7,57% dibandingkan dengan bahan kontrol 5,02%. Dapat diketahui bahwa terjadi peningkatan derajat kehalusan bubuk kakao teraglomerasi sejalan dengan peningkatan ukuran partikel bubuk kakao dibandingkan bahan kontrol. Berdasarkan hasil dari penelitian menunjukkan bahwa penggunaan *batch-type steam jet agglomerator* dengan ketiga variabel perlakuan mempengaruhi karakteristik bubuk kakao instan.

Kata kunci: Aglomerasi, minuman kakao instan, solubilitas, *steam jet agglomerator*, rak

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**PHYSICAL PROPERTIES OF INSTANT COCOA DRINKING POWDER
PROCESSED USING BATCH-TYPE STEAM JET AGGLOMERATOR
WITH VARIATIONS OF TRAY LEVEL, THICKNESS, AND DURATION
OF STEAMING PROCESS**

ABSTRACT

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Cocoa markets opportunities are very open both domestically and for export in Indonesia. Cocoa drinks are one of the products that are most popular and in demand by the people of Indonesia. The result that is usually obtained in the manufacture of cocoa drinks is the presence of sedimentation of cocoa powder. The presence of these sedimentations indicates that the instant properties of the cocoa drink are not yet optimum. Agglomeration is one of the most effective ways to improve the rehydration properties of dry food powders. Steam jet agglomeration is a more efficient and simpler alternative process for small and medium-sized industries because the process and operation conditions are easier (user-friendly). This study aims to examine the effect of using a batch type of steam jet agglomerator on the physical, instant, and flow characteristics of instant cocoa powder produced after going through the agglomeration process with the effect of tray level (up, middle, down), thickness (0.5, 1, 1.25 cm), and duration of steaming process (1, 3, 5 minutes) as variables.

From several characteristics of instant cocoa powder when compared to the control material (without steam) such as the solubility value increased by 27.44%-32.71% with the solubility value of the control materials 26.84%. In addition, the dispersibility value of cocoa powder after agglomeration was higher with a value range of 6.06%-7.57% compared to the control material of 5.02%. It can be seen that there is an increase in the fineness modulus of agglomerated cocoa powder in line with the increase in the particle size of cocoa powder compared to the control materials. According the result of the study, the use of batch type steam jet agglomeration with the three variables affected the characteristics of instant cocoa powder.

Keywords: Agglomeration, instant cocoa powder, solubility, steam jet agglomerator, tray

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