

**KAJIAN PENGARUH SUHU UDARA INLET DAN KONSENTRASI
PADATAN TERHADAP SIFAT FISIK BUBUK KOPI (*COFFEA Sp*)
HASIL PENDINGINAN DENGAN *SPRAY DRYER* MENGGUNAKAN
*ATOMIZER TIPE PNEUMATIC***

Tsania Ayu Rohani

09/289207/TP/9650

INTISARI

Kopi merupakan komoditi penting di dunia. Konsumsi kopi terus meningkat tiap tahunnya. Pengolahan kopi di Indonesia umumnya memakai cara sederhana dimana kopi yang telah disangrai kemudian digiling lalu dikemas. Cara pengolahan tersebut dianggap kurang praktis karena akan meninggalkan endapan saat diseduh. Penelitian ini bertujuan untuk mengetahui pengaruh suhu udara pengering dan konsentrasi padatan umpan terhadap sifat fisik bubuk kopi pada proses pengeringan dengan pengering semprot dengan *atomizer tipe pneumatic*.

Pengeringan ekstrak kopi menggunakan pengering semprot (*spray dryer*) skala laboratorium dengan 3 jenis variasi suhu yaitu 180°C, 200°C dan 220°C dan 3 variasi konsentrasi padatan yaitu 10%, 20% dan 30%. Diamati data suhu udara pengeringan, suhu lingkungan dan RH setiap 5 menit selama proses pengeringan berlangsung. Parameter penentu kualitas bubuk kopi hasil pengeringan antara lain kadar air, kelarutan, wettability, bulk density, rasa, aroma dan warna. Analisis data yang digunakan adalah analisis statistik menggunakan anova 2 arah (*two way anova*). Pada tahap akhir dilakukan evaluasi menggunakan analisis statistik (*Metode Duncan*) untuk mengetahui efektifitas metode yang digunakan.

Hasil penelitian menunjukkan bahwa pengeringan bubuk kopi dengan berbagai variasi mampu menghasilkan bubuk kopi dengan kadar air 3,41%-6,72%. Suhu memberikan pengaruh signifikan terhadap wettability, namun tidak memberikan pengaruh signifikan terhadap nilai kadar air, derajat keputihan, kelarutan dan bulk density. Konsentrasi padatan umpan memberikan pengaruh yang signifikan terhadap kadar air, derajat keputihan dan wettability, namun tidak memberikan pengaruh beda nyata terhadap nilai kelarutan dan bulk density. Secara umum variasi yang disarankan pada pengeringan kopi menggunakan *spray dryer* adalah suhu 180°C dan konsentrasi padatan 30%.

Kata kunci: kopi, kopi instan, *spray dryer*

STUDY OF THE INLET TEMPERATURE EFFECT AND SOLIDS FEED CONCENTRATION IN THE COFFEE POWDER COMPLEXION WITH DRYING PROCESS USING SPRAY DRYER WITH PNEUMATIC TIPE ATOMIZER

Tsania Ayu Rohani

09/289207/TP/09650

ABSTRACT

Coffee is an important commodity in our earth. Coffee consumption is increasing every year. In general, Coffee processing in Indonesia is using simple method in which after the roasting process, the coffee will be ground and then will be packaged. This method is less practically considered, because when brewed there will be coffee grounds residual. This research is purposed to understand the effect of pneumatic type atomizer air temperature and the solids feed concentration with the coffee powder complexion.

The drying process use lab scale spray dryer with 3 degree variation (180°C, 200°C and 220°C) and 3 solids concentration variation (10%, 20% and 30%). During this process, drying air temperature, environment temperature, and RH is always observed every 5 minutes. The coffee powder quality parameter after the drying process is water level, solubility, wettability, bulk density, flavor, aroma, and color. The analysis is used two-way ANOVA. And in the final stage, the evaluation is used statistical analysis (Duncan method) to determine the effectiveness of the method used.

The research results showed that the drying process of coffee powder with various method, capable to produce coffee powder with 3.41% -6.72% water level. Temperature gives a significant impact on the wettability, but does not have a significant impact on the value of water level, degree of whiteness, solubility and bulk density. Solids feed concentration has a significant influence on water level, degree of whiteness and wettability, but not significantly have different effect on the value of solubility and bulk density. In general, variations that suggested in a coffee drying process using a spray dryer is 180°C temperature and 30% solids concentration.

Keyword: coffee, instant coffee, spray dryer