
UJI KINERJA MESIN PENYANGRAI TIPE HORIZONTAL CONTINUE UNTUK TEPUNG MOCAF, TAPIOKA DAN GAPLEK

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INTISARI

Mesin peyangrai yang digunakan adalah mesin peyangrai tipe *horizontal continue*. Dengan dimensi panjang 115 cm, 56 cm dan 89 cm, penggerak berupa motor listrik 1/4 hp, 220 V, single phase dan 1400 rpm. Penerusan daya penggerak kemudian direduksi menggunakan *gear box* dengan rasio 1 : 40 dan size 40. Selanjutnya hasil reduksi dihubungkan dengan roda gigi berantai dan terakhir sistem friksi antara enam buah silinder baja.

Metode pengamatan uji kinerja mesin peyangrai tipe *horizontal continue* dilakukan dengan variasi suhu 40°C, 50°C, 60°C, dan 70°C. Kecepatan penguapan massa air berdasarkan variasi suhu sebesar 7,4 gr/menit dengan pengaturan suhu 60°C pada tepung gaplek, tepung tapioka sebesar 9,7 gr/menit dengan pengaturan suhu 60°C, dan tepung mocaf sebesar 10,8 gr/menit dengan pengaturan suhu 70°C. Sedangkan penggunaan bahan bakar paling besar ketika pengaturan suhu 70°C dan untuk kapasitas penyangraian dengan berat bahan 7 kg dan waktu 20 menit adalah 0.35 kg/menit.

Perhitungan analisis ekonomi penggunaan mesin peyangrai tipe *horizontal continue* didapat nilai *break even point* sebesar 105,63 hari untuk tepung gaplek dengan asumsi harga jual Rp 5.000, tepung tapioka 143,95 hari dengan asumsi harga jual Rp 8.500, dan tepung mocaf 89,71 hari dengan asumsi harga jual Rp 9.500. Sesuai perhitungan analisis ekonomi penggunaan mesin peyangrai tipe *horizontal continue* dikatakan layak karena didapat nilai *Net Present Value* >0.

Kata kunci: mesin peyangrai tipe *horizontal continue*, tepung berbahan baku singkong, kecepatan penguapan massa air, konsumsi bahan bakar, analisis ekonomi

**Performance Test of Roasters Machine with Horizontal Continues Type
for Mocaf Tapioca and Cassava (Gaplek) Flour**

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Abstract

Roasters machine that used with horizontal continues type. With dimensions of length is 115 cm, 56 cm and 89 cm, electric motor as driver in the form of a 1/4 hp, 220 V, single phase and 1400 rpm. Then, resumption of power driver is reduced with gear box with a ratio of 1: 40 and size 40. Furthermore, the reduction result is related with the gear chain and finally the friction system between six cylinder steel.

Observation methods of performance test for horizontal continues roasters machine are executed with variations in temperature of 40 °C, 50 °C, 60 °C and 70°C. The rate of evaporation of water masses by variations in temperature is 7.4 g/min with a temperature setting of 60 ° C on cassava flour, tapioca flour of 9.7 g/min with a temperature setting of 60 °C, and mocaf flour of 10.8 g/min with a temperature setting of 70 °C. The most biggest fuel is used when with a temperature setting of 70 °C and capacity roaster with 7 kg and 20 minute is 0.35 kg/min.

Calculation of economic analysis for horizontal continues roasters machine are obtained break even point of 105.63 days for cassava flour with assuming a selling price of Rp 5,000, 143.95 days for tapioca flour with assuming a selling price of Rp 8,500, and 89.71 days for mocaf flour with assuming a selling price of Rp 9,500. Appropriate with economic analysis calculation from used horizontal continues roasters machine is feasible because value of Net Present Value is > 0.

Key word : roaster machine, horizontal continue type, flour, mocaf, tapioca, cassava, economic, analysis