

THE EFFECT OF INITIAL ROENING TEMPERATURE AND ADDITIONAL TIME AFTER *FIRST CRACK* ON THE PHYSICAL CHARACTERISTICS OF COFFEE ROBUSTA (*Coffea canephora*) ROASTED

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ABSTRACT

Roasting coffee beans is a process carried out to form the aroma and taste of coffee beans. The roasting process takes time varying from 7 to 30 minutes. The initial temperature of roasting robusta coffee beans is between 150°C -190°C. At 205°C the seed size doubles (*first crack*) and the color change of the seeds to brown (*light*). At a temperature of 205°C to 230°C there will be a color change from *light brown* become *medium brown* and explosion or *crack* the second will occur at a temperature of 225°C to 230°C and the color of the seeds is close to the color *medium dark brown*. This research activity aims to determine the physical characteristics of roasted coffee beans at different initial roasting temperatures and additional time after first crack. This research was conducted in December 2022 at the Agricultural Product Technology Laboratory, Jember State Polytechnic, using a Descriptive Method Test with observational parameters 1) Moisture content; 2) Density of coffee beans; 3) Temperature and *timeturning point*; 4) *Rate of Rise* (RoR); 5) *First crack*; 6) Yield; 7) Density of roasted coffee; 8) Color; 9) *Apparent swelling*. The treatment used is the initial temperature of roasting and additional time after *first crack*, includes initial roasting temperatures of 140°C, 150°C, and 160°C with additional time after *first crack* 1 minute 30 seconds and 2 minutes 30. The results showed that the initial roasting temperature and additional time after the *first crack* changed the physical characteristics including turning point temperature 79 °C - 90 °C and turning point time 1 minute 12 seconds – 1 minute 16 seconds, temperature *first crack* 194°C - 199°C and time *first crack* 10 min 46 sec – 12 min 8 sec, color *roast bean* with an average *agtron* value of 46.9 – 60.9, yield *roast bean* 84,6% - 87,2%, and *apparent swelling* 48,46% - 70%.

Keywords: *Initial roasting temperature, Yield of roasted coffee, Density, First Crack, Apparent swelling*