

INTISARI

Malam inlei digunakan untuk membuat pola restorasi mahkota jaket, *inlay*, atau *bridge*. Komposisi malam inlei adalah parafin, karnauba, malam lebah, dan *ceresin*. Penambahan bahan pengisi pada malam inlei digunakan untuk menurunkan daya alir. Penelitian ini dilakukan untuk mengetahui pengaruh variasi konsentrasi bahan pengisi organik tepung tongkol jagung terhadap daya alir malam inlei.

Bahan penelitian yang digunakan yaitu parafin (Pertamina, Indonesia), karnauba (Bratachem, Indonesia), malam lebah (Pramuka, Indonesia), dan bahan pengisi tepung tongkol jagung (PT. Pagoh Selaker, Indonesia). Sampel penelitian terdiri dari lima kelompok dengan empat sampel pada setiap kelompok. Komposisi rasio parafin : karnauba : malam lebah : tepung tongkol jagung (% berat) : 70:5:25:0 (K0%), 65:5:25:5 (K5%), 60:5:25:10 (K10%), 55:5:25:15 (K15%), 50:5:25:20 (K20%). Bahan penelitian dilelehkan lalu dimasukkan ke dalam cetakan diameter 10 mm dan tinggi 6 mm. Sampel diukur tinggi awalnya dengan *sliding caliper* (Mitutoyo, Jepang). Sampel diberi beban dengan *flow instrument* dalam *water bath* suhu 45°C selama 10 menit, lalu diukur tinggi akhirnya dan dihitung persentase daya alirnya. Data hasil penelitian dianalisis menggunakan uji *Kruskal-Wallis* dan *Mann-Whitney* (0,05).

Hasil penelitian berupa rerata nilai persentase daya alir malam inlei kelompok I hingga V yaitu 83,39±1,78%; 81,84±1,09%; 80,60±0,51%; 77,37±1,13%; 72,70±3,32%. Hasil uji *Kruskal-Wallis* menunjukkan adanya pengaruh variasi konsentrasi tepung tongkol jagung terhadap daya alir malam inlei ($p < 0,05$). Hasil uji *Mann-Whitney* menunjukkan adanya perbedaan yang bermakna antar sebagian besar kelompok. Kesimpulan dari penelitian ini adalah variasi konsentrasi bahan pengisi organik tepung tongkol jagung berpengaruh menurunkan daya alir malam inlei.

Kata kunci : Malam inlei, konsentrasi, tepung tongkol jagung, daya alir.

ABSTRACT

Inlay wax is used to make restoration pattern for crown, inlay, or bridge. The composition of inlay wax includes paraffin, carnauba, beeswax, and ceresin. In order to decrease the flow of inlay wax, fillers are usually added. Therefore, the current research was conducted to determine the effect of concentration variations of corncobs flour organic filler on the flow of inlay wax.

The research materials are paraffin (Pertamina, Indonesia), carnauba (Bratachem, Indonesia), beeswax (Pramuka, Indonesia), and corncob flour filler material (PT. Pagoh Selaker, Indonesia). Samples consisted of five groups with four samples for each group. The composition of the ratio of paraffin : carnauba : beeswax : corncob flour (%weight) was 70:5:25:0 (K0%), 65:5:25:5 (K5%), 60:5:25:10 (K10%), 55:5:25:15 (K15%), 50:5:25:20 (K20%). The materials were melted then were put in the molds with diameter of 10 mm and height of 6 mm. The initial length of the samples was measured by using sliding caliper (Mitutoyo, Japan), then it was given weight with flow instrument in water bath at 45°C for 10 minutes. The final length and the flow were measured and calculated. The results were analyzed using Kruskal-Wallis and Mann-Whitney test (0.05).

The results of the study showed the mean percentage of inlay wax flow in group I to V each of which respectively stands 83.39±1.78%; 81.84±1.09%; 80.60±0.51%; 77.37±1.13%; and 72.70±3.32%. The result of Kruskal-Wallis test showed there was significant influence of the variations of corncob flour concentration towards the flow of inlay wax ($p < 0.05$). Meanwhile, the result of Mann-Whitney test showed there was significant difference among most of the sample groups. Thus, it can be concluded that the variation of concentration of corncob flour organic filler impinges on decreasing the flow of inlay wax.

Keywords : Inlay wax, concentration, corncob flour, flow.