BRITIS TERCASSUS (BIOKOMPOSIT PENGGANTI ASBES DARI *BACTERIA CELLULOSE DARI AIR LEGEN,* SABUT *Cocos nucifera*, DAN SABUT *Borassus flabellifer*)

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ABSTRAK

Latar belakang: Asbes penyebab asma, mesotelioma (kanker) sudah dilarang didunia tapi masih banyak digunakan di Indonesia (10,03%), di Bangka Belitung (57,18 %), Jakarta (52,10 %), Riau (32,82%); Banten (18,76). Perlu upaya konkrit mensubstitusi material asbes lebih ramah lingkungan dan kesehatan. Biokomposit dari *Bacteria Cellulose,* sabut *Cocos nucifera*, dan sabut *Borassus flabellifer* berpotensi menjadi alternatif pengganti asbes. **Tujuan:** Mengetahui efektivitas BRITIS TERCASSUS (Biokomposit pengganti asbes dari *Bacteria Cellulose air legen,* sabut *Cocos nucifera*, dan sabut *Borassus flabellifer)* sebagai bahan alternatif pengganti asbes yang ramah lingkungan dan kesehatan. **Metode penelitian:** Rancangan penelitian ini adalah eksperimental dilaboratorium dengan rancangan acak lengkap (RAL), terdiri dari 5 perlakuan dan 3 kali ulangan. Perlakuan 1: BC (0%) SK (20%) SS (10%) R (70%), Perlakuan 2: BC (5%) SK (15%) SS (10%) R (70%), Perlakuan 3: BC (10%) SK (10%) SS (10%) R (70%), Perlakuan 4: BC (15%) SK (5%) SS (10%) R (70%), dan Perlakuan 5: BC (20%) SK (0%) SS (10%) R (70%). Data yang diperoleh meliputi data uji impak mengacu standar ISO 179-1 dan data uji tarik *(Tensile Strength)* yang mengacu pada ASTM D 638-02. **Hasil:** BRITIS TERCASSUS (Biokomposit Dari Bacteria Cellulose air legen, Sabut Siwalan, Dan Sabut Kelapa) terhadap uji impak *(Charphy Test*) & tarik *(Tensile Strength)* terbukti berpengaruh nyata dengan *p value* < 0,05. Spesimen perlakuan 3 dengan BC (10%) SK (10%) SS (10%) R (70%) memiliki performa terbaik dibandingkan dengan spesimen perlakuan lainnya dengan nilai impak 3,90 Joule/mm^2 dan nilai *Tensile Strength* 18,33 N/mm^2. **Saran:** Direkomendasikan penggunaan *Bacteria Cellulose* (10%), sabut *Cocos nucifera* (10%), dan sabut *Borassus flabellifer* (10%) *dan Resin* (70%) sebagai material pengganti asbes yang ramah lingkungan dan lebih sehat.

Kata Kunci: Asbes; Biokomposit; *Bacteria Cellulose; Cocos nucifera*; *Borassus flabellifer*

BRITIS TERCASSUS (BIOCOMPOSITE ASBESTOS REPLACEMENT FROM *CELLULOSE BACTERIA* FROM LEGEN WATER, COCONUT FIBER , AND *Borassus flabellifer* Fiber)

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ABSTRACT

Background: Asbestos causes asthma, mesothelioma (cancer) has been banned worldwide but is still widely used in Indonesia (10.03%), in Bangka Belitung (57.18%), Jakarta (52.10% *)* , Riau (32.82%); Banten (18.76). Concrete efforts are needed to substitute asbestos materials that are more environmentally and health friendly. Biocomposites from *Bacteria Cellulose , Cocos n ucifera* fiber , and *Borassus flabellifer fiber* have the potential be an alternative to replace asbestos. **Objectives:** Knowing the effectiveness of BRITIS TERCASSUS (Biocomposite asbestos substitute from *Bacteria Cellulose air legen , Cocos nucifera fiber* , and *Borassus flabellifer* fiber *)* as an alternative material to replace asbestos that is environmentally friendly and healthy . **Research method:** The design of this study was an experimental laboratory with a completely randomized design (CRD) , consisting of 5 treatments and 3 replications. Treatment 1: BC (0%) SK (20%) SS (10%) R (70%), Treatment 2: BC (5%) SK (15%) SS (10%) R (70%), Treatment 3: BC (10%) SK (10%) SS (10%) R (70%), Treatment 4: BC (15%) SK (5%) SS (10%) R (70%), and Treatment 5: BC (20%) SK (0%) SS (10%) R (70%). The data obtained include impact test data referring to the ISO 179-1 standard and tensile test data *(Tensile Strength)* referring to ASTM D 638-02. **Results:** BRITIS TERCASSUS (Biocomposite from Bacteria Cellulose of water legen, Siwalan Fiber, and Coconut Fiber) against impact test *(Charphy Test*) & tensile *(Tensile Strength)* proven to have a significant effect with *a p value* < 0.05. Treatment specimen 3 with BC (10%) SK (10%) SS (10%) R (70%) had the best performance compared to other treatment specimens with an impact value of 3.90 Joule/mm2 and a *Tensile Strength value of* 18.33 N/mm ^{2} . **Recommendation:** Recommended use *of Bacteria Cellulose (10* %), *Cocos nucifera* fiber (10%), and *Borassus flabellifer fiber* (10%) *and Resin* (70%) as an environmentally friendly and healthier substitute for asbestos .

Keywords: Asbestos; Biocomposites; *Bacteria Cellulose; Cocos nucifera* ; *Borassus flabellifer*