

ABSTRACT**INHIBITORY EFFICACY OF ZINC OXIDE *Allium Sativum* Linn. EXTRACT AS PULP CAPPING MATERIAL AGAINST *Lactobacillus acidophilus*****ABSTRACT**

Background: Pulp capping treatment is simple endodontic treatment performed on pulp tissue with a diagnosis of reversible pulpitis. Dominant bacteria in the deep caries are *Lactobacillus acidophilus*. Zinc oxide eugenol usage in an opened pulp is controversial because it can cause irritation. 100% *Allium sativum* Linn. extract expected to be able used as alternative material of eugenol because contains antibacterial compounds such as steroids, alkaloids, flavonoids, essential oils, triterpenoids and allicin. **Objective:** To determine the effect of the zinc oxide 100% *Allium sativum* Linn. extract as pulp capping material in inhibiting the growth of *Lactobacillus acidophilus*. **Methods:** Zinc oxide was mixed with 100% *Allium sativum* Linn. extract using a ratio of 1:1 and 2:1, then made a suspension of bacteria *Lactobacillus acidophilus* which was comparable to a McFarland standard 0.5 of 1.5×10^8 CFU / ml. Sixteen petridish containing nutrient agar media (NA) was divided into 2, 8 first petridish each were divided into 4 areas. Eight petridish others were divided into 3 areas. *Lactobacillus acidophilus* bacteria grown on petridish containing NA media. Petridish contains planted *Lactobacillus acidophilus* in NA media and given the appropriate treatment and control groups sample was then incubated at a temperature of 37°C in anaerobic atmosphere for 24 hours. Observations and measurements of bacterial growth inhibition zone. Data were analyzed using one-way ANOVA. **Result:** The results of the analysis of one-way ANOVA found significant differences in inhibition after administration of zinc oxide 100% *Allium sativum* Linn. extract with ratio of 1:1 and 2:1. **Conclusion:** Results of this study can be concluded that zinc oxide 100% *Allium sativum* Linn. extract with a ratio of 1:1 and 2:1 can inhibit the growth of bacteria *Lactobacillus acidophilus*.

Keywords : Zinc oxide, 100% *Allium sativum* Linn. extract, pulp capping, *Lactobacillus acidophilus*

ABSTRAK**DAYA HAMBAT SENG OKSIDA EKSTRAK *Allium sativum* Linn.
SEBAGAI BAHAN *PULP CAPPING* TERHADAP *Lactobacillus acidophilus*****ABSTRAK**

Latar Belakang: Perawatan *pulp capping* merupakan perawatan endodontik sederhana yang dilakukan pada jaringan pulpa dengan diagnosis *pulpitis reversible*. Bakteri dominan pada karies profunda adalah bakteri *Lactobacillus acidophilus*. Penggunaan seng oksida eugenol pada pulpa yang terbuka masih kontroversi karena dapat menyebabkan iritasi. Ekstrak *Allium sativum* Linn. 100% diharapkan dapat digunakan sebagai bahan alternatif eugenol karena mengandung senyawa antibakteri seperti steroid, alkaloid, flavonoid, minyak atsiri, triterpenoid dan *allicin*. **Tujuan:** Untuk mengetahui daya hambat seng oksida ekstrak *Allium sativum* Linn. 100% sebagai bahan *pulp capping* terhadap pertumbuhan *Lactobacillus acidophilus*. **Metode:** Seng oksida ekstrak *Allium sativum* Linn. 100% dicampur dengan perbandingan 1:1 dan 2:1. Suspensi bakteri *Lactobacillus acidophilus* disetarakan dengan standar *McFarland* 0,5 sebesar $1,5 \times 10^8$ CFU/ml. Enam belas *petridish* berisi media *nutrient agar* (NA) dibagi menjadi 2, 8 *petridish* pertama masing-masing dibagi menjadi 4 bagian sama besar. Delapan *petridish* yang lain dibagi menjadi 3 bagian sama besar. Bakteri *Lactobacillus acidophilus* ditanam pada *petridish* yang berisi media NA. *Petridish* berisi *Lactobacillus acidophilus* dalam media NA dan diberi perlakuan sesuai kelompok kontrol dan kelompok sampel kemudian diinkubasi pada suhu 37°C pada suasana anaerob selama 24 jam. Pengamatan dan pengukuran zona hambat pertumbuhan bakteri. Data dianalisis statistik menggunakan *one-way ANOVA*. **Hasil:** Hasil analisis *one-way ANOVA* terdapat perbedaan daya hambat yang signifikan setelah pemberian seng oksida ekstrak *Allium sativum* Linn. 100% perbandingan 1:1 dan 2:1. **Simpulan:** Hasil penelitian ini dapat disimpulkan bahwa seng oksida ekstrak *Allium sativum* Linn. 100% dengan perbandingan 1:1 dan 2:1 dapat menghambat pertumbuhan bakteri *Lactobacillus acidophilus*.

Kata Kunci: Seng oksida, *Allium sativum* Linn. 100%, *pulp capping*, *Lactobacillus acidophilus*