

**PERBEDAAN EKSTRAK DAUN SIRIH MERAH DAN SODIUM HIPOKLORIT TERHADAP PEMBERSIHAN SMEAR LAYER PADA PERMUKAAN DINDING SALURAN AKAR**

**(THE DIFFERENCES BETWEEN RED BETEL LEAF EXTRACT AND SODIUM HYPOCHLORITE IN REMOVING SMEAR LAYER ON THE SURFACE OF ROOT CANAL WALL)**

**ABSTRACT**

**Background:** Root canal treatment consists of preparation, sterilization, and obturation. During root canal preparation, cut debris is smeared over the dentinal surface, forming a smear layer. Smear layer will reduce attachment of the root canal filling material and organic material in smear layer can be substrate for microorganism. Preparation of root canal should always be followed by irrigation. NaOCl is the most used irrigant solution in endodontic. It has been very effective disinfecting and tissue-dissolving properties but is incapable of removing the smear layer. Moreover, red betel leaf extract (*Piper crocatum*) contain saponin compound that are as “surfactants” which can dissolve smear layer. **Purpose:** The purpose of this study was to know the differences between red betel leaf extract (*Piper crocatum*) 25% and NaOCl 2.5% in order to remove the smear layer. **Methode:** Three groups of teeth (7 teeth in each) were instrumented with protaper for hand use files to F3 and irrigated as follows: Group 1: with red betel leaf extract (*Piper crocatum*) 25%; Group 2: with NaOCl 2.5%; Group 3 (control): with aquadest. Furthermore, those teeth were split horizontally and longitudinally, the apical third of the root walls were observed by a scanning electron microscope (SEM). **Result:** There were significant differences between each group ( $P<0,05$ ). Median value of group 1 with red betel leaf extract (*Piper crocatum*) shown 1, this value (1) is the smallest value compared to the value of the other groups. **Conclusion:** Red betel leaf extract (*Piper crocatum*) 25% better than NaOCl 2.5% to remove the smear layer.

**Keyword:** Red betel leaf extract (*Piper crocatum*), NaOCl, smear layer