ABSTRACT

**Background.** Enterococcus faecalis is the most dominant microorganisms found in endodontic secondary infection with prevalence ranging between 24\% - 77\%. Defense mechanism of Enterococcus faecalis bacteria is forming biofilm. A study showed that bacteria in mature biofilms can 10-1000 times more resistant to antimicrobials than bacteria in a planktonic form. One of the natural substances that can be used as antibiofilm to irrigation root canals is extract of fresh bay leaf (*Syzygium polyanthum* Wight). Chemical components in bay leaves include flavonoids, tannins, and essential oils, which have antibacterial capability and damage the membrane biofilm. **Purpose.** To determine the effective concentration of fresh bay leaf extract (*Syzygium polyanthum* Wight) that can inhibit biofilm *Enterococcus faecalis*. **Method.** This research is in-vitro laboratory experimental with post test only control group design using microtiter plate assay. Samples using Enterococcus faecalis ATCC 29212 cultured in TSB (Trypticase Soy Broth) + glucose. Bay leaf extract (*Syzygium polyanthum* Wight) concentration in this study was 13\%, 12.25\%, 11.50\%, 10.75\%, 10\%, 9.25\%, 8.50\%, 7.75\%, 7\%, and 6.25\%. **Results.** At the 13\% concentration of *Syzygium polyanthum* Wight, showed 100\% inhibition of biofilm, means that the 13\% concentration of bay leaf extract (*Syzygium polyanthum* Wight) can totally inhibit biofilm formation of Enterococcus faecalis. **Conclusion.** The effective concentration of bay leaf extract (*Syzygium polyanthum* Wight) which inhibit Enterococcus faecalis biofilm is 13\%.

**Keywords:** *Syzygium polyanthum* Wight extract, biofilm, *Enterococcus faecalis*, effective concentration.