

## The Effect of Emulsifiers on Antimicrobial Activity of Biocide in Water-soluble Cutting Fluids

김현주, 김성배\*  
경상대학교

(sb\_kim@nongae.gsnu.ac.kr\*)

Additives in water-soluble cutting fluid can interact with biocide in a number of ways in which its antimicrobial activity can be affected. The effect of emulsifiers on antimicrobial activity of biocide was investigated using the *Pseudomonas aeruginosa* which frequency of occurrence in contaminated fluids is very high and its growth and survival is excellent. When a biocide was used with an emulsifier, its antimicrobial activity was affected by the emulsifier used. The antimicrobial activity of Kathon 886 MW decreased when emulsifier (each of PEG, TW) was used. Triadine 3 was not affected by emulsifiers used. The antimicrobial activity of Triadine 10 decreased when the emulsifier (each of NP-5, TW) was used, and that of Grotan BK decreased when the emulsifier (each of PEG, CA) was used. The antimicrobial activity of each emulsifier was also compared. The results showed that all emulsifiers were biosupportive. The antimicrobial activity of biocides was in the order of Triadine 10 < Triadine 3 < Kathon 886 MW < Grotan BK.