# Photodegradaion of Bistrifluron under artificial sunlight

윤영근, 이호주, 유광현, 김정한

*서울대학교 농생명공학부*

Bistrifluron [N-2,6-Difluorobenzoyl-N-(2-chloro-bis(3,5-trifluoromethyl)-phenyl)urea] is a new insecticide developed by Dongbu Chemical Co (Korea). Photolysis of bistrifluron was conducted in aqueous solution under simulated lights using HANAU SUNTEST equipped with xenon arc lamp and a UV filter (290-800nm).

Bistrifluron in acetonitrile solution (5.0ppm) showed $\lambda$ max at 206 and 254nm.

At 5 days after irradiation, 96.7% of bistrifluron was degraded to give 0.304day-1 of direct photolysis rate constant and 1.02 days of photolytical half-life. Quantum yield of bistrifluron was calculated to be $6.27 \times 10^{-3}$.

Photodegradation of bistrifluron was enhanced in natural paddy water, resulting 1.68 $day^{-1}$ of the calculated rate constants and 10.02 hr of half-life, In synthetic humic water solution for the indirect photolysis degradation date increased to 0.518 $day^{-1}$. By Fenton's regent of various concentrations, similar results were obtained, suggesting that OH radicals acts as strong sensitizer. Acetone showed strong sensitization effect by triplet oxygens involved mechanism.