



Effect of Ronstar PL (mixture of Oxidiazon and Propanil) on survival of some Cyanobacteria in paddy fields of Sri Lanka.

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Application of organic or chemical nitrogen fertilizers in Sri Lanka plays a dominant role in increasing rice yield and the efficiency of agronomic practices. However the increasing cost of nitrogen fertilizers is a heavy burden on farmers. Biological nitrogen fixation by Cyanobacteria is an alternative source of nitrogen in rice fields. However it is reported that the population of Cyanobacteria is gradually diminishing. This phenomenon has been observed by farmers and some researchers. Application of herbicides may be one of the major reasons for the decrease in cyanobacterial population and therefore the critical effects of two common herbicides on Cyanobacterial flora were investigated.

Some cyanobacterial species were isolated from water samples, collected randomly from ten paddy fields in Matara District. The Cyanobacterial species, isolated from those samples, were *Oscillatoria* sp, *Synecococcus* sp, *Microcystis* sp, and *Merismopedia* sp. They were grown in cyanobacterial culture media. Two selected herbicides (Propanil and Ronstar PL) which are commonly used by the farmers in Southern province were tested on those species isolated. Two different concentrations of each herbicide as one equal to the concentration recommended for field application and the other equal to the 50% of the former, were applied separately to each species. The number of cells in 1ml of sample before adding the herbicide and 3, 6 and 9 days after application of the herbicide were counted by using a counting chamber and a haemocytometer. Cell numbers in each treatment and in the control (no herbicide) was analyzed by SPSS computer package. Both herbicides had clear inhibitory effect on the cells of all the species studied. Inhibition was greater at the high concentration of the herbicides. Inhibitory action of both herbicides was high for *Oscillatoria* sp and *Merismopedia* sp, compared to other two species. *Microcystis* was the least affected. Ronstar PL showed higher degree of inhibition than Propanil for all the species studied.

Keywords: Propanil, Ronstar PL, cyanobacteria