ABSTRACT


Nowadays, quality of urban environment is challenging problem. Urban development indicated by the increase of population as well as development in all aspects, it is not only give positive impacts but also negative impacts and ultimately, it can impact the degradation of environment quality. This fact is indicated by environment problems in urban area, for instance: air pollution which reduces oxygen supply and overwhelms production of Carbon dioxide (CO₂), also air temperature rising.

From the foregoing problems, “back to nature” concept is needed to solve environment problem in urban area. Urban forest was introduced to recover environment and ecological condition. Yet, one of constraints in urban forest development is limitation of space for urban forest. Therefore, alternative solution can be employed by increasing the effectiveness of existing urban forest in controlling quality of urban environment. This research is intended to analyze the effectiveness of urban forest types based on its structures and forms toward urban temperature reduction.

The methods used in this research consist of selecting location of field measurement over GIS analysis using “digitizing on screen technique”, air temperature measurement was conducted during 13 hours and twice repetitions, and data analysis over statistic analysis comprising of: analysis of effectiveness urban forest types based upon time of measurement and analysis of effectiveness of urban forest types based upon distance of measurement. Research area was in Bogor area, having high concentration of air pollution.

In this study, there were five urban forest types chosen for temperature measurement, namely: 1) Urban Forest having linear form with second structure, 2) Urban Forest having linear form with multi structure, 3) Urban Forest having dispersed form with second structure, 4) Urban Forest having clustered form with second structure, 5) and Urban Forest having clustered form with multi structure. Based upon both time of measurement and distance of measurement, the result of this research shows that urban forest having dispersed form and second structure is most effective toward air temperature reduction. The study shows the rank of importance of urban forest is as follows: urban forest having dispersed form with second structure (DS), urban forest having linear form with second structure (LS), urban forest having linear form with multi structure (LM), urban forest having clustered form with multi structure (CM), and urban forest having clustered form with second structure (CS).