

ABSTRACT

Nelson Pomalingo and Nurdin. 2012. The infiltration rates and soil permeability to Gorontalo State University campus I areas.

Land utility for physic buildings on Gorontalo State University campus I has shown rising significant trends. Whereas, the land was originally rice field productively and water catchments area. Consequently, its function is reduced due to the infiltration of water hampered. This study aimed to (a) determine the amount of soil infiltration rate and permeability, (b) determine the variability of the soil, and (c) establish land management technology package that may applies. The study was conducted on six months in the campus 1 Gorontalo State University areas. The equipment consists of Guelph permeameter, rol meter, water bag, stop watch, soil bor and raffia. Whiles, the materials consist of water and soil samples. Infiltration measurements carried out in a transect from the south to the north lines. Measurements will be performed at every five meters with two measurements (0-10 cm and 10-20 cm). On existing lines any building or standing crop, the measurement will be carried out on one side to detect the effect of distance and the soil variability. Parameters observed include water infiltration, and soil permeability. The result of this research shown that infiltration rate (i) and soil permeability (Ks) at campus 1 Gorontalo State University areas classified as very rapid. Whiles, the highest of infiltration rate and soil permeability values was to 140 m distance or point 28 and the lowest was to 170 m distance or point 34. The rate of infiltration in the campus I UNG area on the first transect measuring of points 1 to 23 were classified as fast, while at the measurement of point 24 to 46 classified as moderate. In the second transect measuring of the points 1 to 5 were classified as moderate. Soil permeability in the first and second transects were classified as fast. The greatest distance of soil potential matrix flows on the first transect of point 29 or 140 m was 3.20 cm²/jam, while the second transect, obtained the highest value of 2.98 cm²/jam. The rates of infiltration on the first transect shows that the trend increasing distance (lag, h) the higher the spatial diversity, as well as the trend of the permeability of the soil and the soil matrix potential. Based on the model and the classes are passing score catchment zone (> 50), there are three tread zones catchment, namely Zone A, Zone B and Zone C. for Zone A; located in the north area of UNG campus I specific behind the Faculty of Engineering (Mechanical Workshop), while Zone B; located in the central part of the UNG campus I area which is in the former field Dumhil, exactly in front of prospective buildings of UNG Rectorate new, while Zone C; located in the western part of the UNG campus area was in front new building constructed UNG Auditorium.

Keywords: Infiltration, permeability, soil, water absorption