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Analysis of infiltration and surface runoff using rainfall simulator with variation of rain intensity and vegetation

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Abstract. Changes in watershed land use are a concern due to the increase of flood from year to year which can harm the community both material and non-material. Meanwhile, during the dry season there was a significant decrease and causes irrigation water supply and clean water for daily needs to decrease and even to dry. Surface runoff and infiltration in a watershed area becomes an inseparable unit, with increasing surface runoff causing big flooding, flash floods and reducing infiltration, causing less groundwater supply to maintain river availability tend to decrease. The testing of vegetation effect on watershed areas on surface runoff and infiltration with a rainfall simulator was to analyze the extent of the role of vegetation in rainfall intensity with surface runoff and infiltration on rainfall intensity. Tests were carried out using a rainfall simulator using intensities I2 and I5 on two types of vegetation selected at the location of Maros watershed, namely mango and bamboo vegetation. The results show that changes in land cover increase surface runoff and reduce infiltration. So that land use should not be carried out carelessly and still have to pay attention to the sustainability of the function of the forest as river water retention. Land damage will be responded to by unexpected flooding and disruption of the land ecosystem, causing the extinction of flora and fauna habitat to become an indicator of increasingly critical land damage.