

ABSTRACT
LAUNDRY WASTE PROCESSING
WITH FLOCCULATION COAGULATION METHOD
TO USED AS GROWING MEDIA

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Laundry waste is liquid waste that is produced from the washing process using detergent. Detergents contain substances that are harmful to the environment such as surfactants and phosphates. One of the processing methods that can be used is the coagulation-flocculation method as a pretreatment and planting medium. This study aims to reduce the content of detergents in laundry waste and utilize the phosphate content contained in the sediment and utilize the sediment for planting media. This research phase consists of the coagulation-flocculation pretreatment stage and uses the results of the sludge as a planting medium in accordance with the specified variations. The study begins with rapid stirring of the sample that has been added to coagulant then slow stirring to form floc in the sample and separates the liquid and solid waste produced using filter paper. The variations used are 60 gram, 80 gram, 100 gram and 120 gram coagulant doses and coagulation time for flocculation for 60 minutes, 90 minutes, 120 minutes and 150 minutes. From the results of the study obtained the highest LAS removal value on variations of the addition of 100 gram PAC doses and 60 minutes time, which is 99.00%. For the highest phosphate removal at 120 grams PAC variation and 120 minutes time in the amount of 93.39%. While for the reduction of LAS and phosphate levels in laundry waste from the initial concentration of LAS which is 2.02 mg / L can be reduced to 0.02 mg / L and the initial concentration of phosphate which is 21.994 mg / L can be reduced to 1.453 mg / L. In the use of growing media, the best growth sample of chilli plants is sample 7 with a composition of 5% laundry waste sediment.

Keywords: laundry waste treatment, surfactant, phosphate, coagulation-flocculation.