

# **PHOSPORUS DISSOLUTION FROM ROCK PHOSPHATE BY USING INDUSTRIAL WASTE WATER OF TOFU**

## **ABSTRACT**

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Fertilizer is an essential requirement to support agricultural production. Most farmers prefer to use subsidized fertilizer than fertilizer which is not subsidized by the Government. On the other hand, the Government needs to do the rationing fertilizer subsidy in each region. This leads to the shortage of subsidized inorganic fertilizers in some location limited. Development of alternative fertilizers with raw materials locally available can be a reliable solution. By utilizing locally-based raw materials, the production of fertilizer and transport cost will be lower so that farmers will be helped to get fertilizer at affordable cost. One example of fertilizer raw materials are locally available phosphate fertilizer.

The purpose of this research is to study the effect of the waste tofu variable addition in the solubility of the phosphate raw material phosphate rock. Immersion method used phosphate rock using immersion liquid industrial waste out with one immersion, multiple replications of immersion, and with different volumes of waste treatment. Phosphate rock that has been smoothed with a size of 100 mesh and 200 mesh soaked with liquid industrial waste out in accordance with the method prescribed immersion then roasted and P analyzed soluble and the resulting reduction in size.

The results showed that the lowest pH obtained from tofu wastewater which has mixed by vinegar equal to 3.71. The results of the P dissolved analysis rock phosphate, at one time soaking treatment was known that there was an increasing in P dissolved from the first day of immersion. The average increase of dissolved P by  $\pm 35\%$ . From the analysis that has been done, the P dissolved value obtained was in a very small comparison with the existing total P content. This is because of the increasing pH of the Liquid Waste Tofu Industry after immersion. The Efforts to increase the P content of dissolved phosphate rock, was done by adding the marinade repetition. The tendency of dissolved P levels increased slightly. It is, seen from the pH of the solution which tends to be high (near neutral) that is equal to 6.63. Then the volume addition of wastewater immersion to increase levels of P dissolved. The results of the P dissolved phosphate stones analysis, after being soaked with the addition of the waste water volume showed an increase in P dissolved. From the measurement of pH, it was suspected that the more the volume of waste water used for soaking, the pH of the solution will decrease, and the resulting soluble P is much higher.