

## CHAPTER V

### CONCLUSION

1. The color of pumice is white and pale yellow at neutral condition (pH 6.7). This material consist of quartz and feldspar minerals and carrying Ca, Mg, K, P, Fe and Cl. The reaction pumice samples are silicic (felsic) rocks, have high porosity which do not intersect each other. The morphology and size of pores have homogeneous structure, irregular or oval shape pores. Volcanic ash samples are light gray to gray color with pH 2.9-5. The material contain feldspar mineral and no quartz as well as essential element Ca, Mg, K, P, Fe, Cl and sulphur (S) elements that do not present in the chemical composition of pumice. The morphological surface characteristics of ash samples are flat grain shape with smaller pores than pumice.
2. Every 1 mm<sup>2</sup> of pumice is able to adsorb an amount of 7 mg Al/ mm<sup>2</sup>, 5 mg Fe/mm<sup>2</sup>, and 2 mg Cl/ mm<sup>2</sup>.
3. Chloride (Cl) and sulphur (S) are indicator of the herbicide adsorption in the samples after XRF analysis. Pumice is able to adsorb chloride (Cl<sup>-</sup>) almost twice than from initial content when direct contact and 3 times higher after placed in sachet. Pumice adsorbed sulphur 3 times higher after treatment. Volcanic ash were different behaviour with pumice during studied. When volcanic ash in direct contact with herbicide solution, they adsorbed chloride 100%, but increase 14 times after placed in sachet. Meanwhile, volcanic ash is not able to adsorb sulphur from herbicide solution. Volcanic ash lost its sulphur 6 times from initial content due to leaching by solution. Hence, volcanic ash is not suitable to adsorb herbicide pollutant.