

CHPPTER VII

CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

Na-bentonite clay can be modified to organoclay and porous clay heterostructures (PCH), respectively. According to XRD pattern and SEM images of PCH, they were the transformation of PCH's structure confirmed from bentonite clay and organoclay. The plate structure was disappeared, while the rough structure was presented. The bentonite clay, organoclay, and PCH were mixed with liquid sulphur at 140°C, after that the mixture was pelletized in pellet form. This work successfully prepared novel sulphur bentonite fertilizer and sulphur-PCH fertilizer in pellet form. While, the sulphur-organoclay was not successfully prepared because of the degradation of existing surfactant. All sulphur bentonite fertilizers were tested by planting with soybean. According to all experiments, sulphur bentonite fertilizers showed a higher performance than sulphur-PCH. However the sulphur fertilizer did not strongly affect to the growth of soybean as N, P, K did, it can be used as an effective source to fully improve the abundance of stems, leaves, seeds and root of soybean. Soybean did not show the sulphur deficiency symptom because the planted soil remained some quantity of sulphur from tap water.

7.2 Recommendations

Soybean plantation should be planted in a glass house for better quality control of temperature, light, and rainfall. All of soybean plantation treatments should be planted by using free sulphate of soil and water to investigate the sulphur deficiency symptom.