CHAPTER V

CONCLUSIONS

After the 60-day monitoring period, the total glyphosate leaching in both of the experiment groups (6.53% and 1.92% for summer and rainy respectively) were clearly higher than in the control group (0.03%). The total AMPA leaching from both experiment groups (2.77% and 1.82% for summer and rainy respectively) were higher than that of the rainy control group, which produced the lowest results (0.09%). The relation between the results of the glyphosate and AMPA leaching could be explained by the degradation that occurred.

The total residual glyphosate in the soil in both experiment groups (6.30% and 2.39%) were higher than that of the summer control group (0.43%). The residue AMPA in both experiment groups (7.35% and 7.30%) were still obviously higher than that of the rainy control group (1.77%), similar to the residue glyphosate results.

Although the aim of this study was to investigate how a commonly used chemical fertilizer affected the leaching of glyphosate, the chemical fertilizer's effect on the accumulation of glyphosate was shown to be of greater importance. However, the leaching of glyphosate into groundwater remained the greater problem since this can directly harm human health.

From an environmental management point of view, the implementation of suitably timed applications of glyphosate herbicide and the chemical fertilizer was deemed to be the best way to solve the problem as it could reduce the possibility of glyphosate leaching and enhance the appropriate degradation of glyphosate in soil. In addition, applying the glyphosate herbicide and chemical fertilizer at appropriate times can further enhance their benefits to the agricultural field.