CHAPTER 6

CONCLUSION

The present study sought to understand the responses of rice to applied N and P levels when grown under changing between aerobic followed by waterlogged soil in rainfed lowland rice. The main findings of this study have addressed gaps in knowledge of rice plant's adaptation to aerobic and anaerobic conditions. In aerobic soil, the growth and nutrient uptake of rice are depressed compared with those of rice grown in waterlogged soil. After transfer from aerobic to waterlogged soil, the growth and nutrient uptake particularly of P uptake are greater than those of plants that kept in waterlogged soil throughout. Moreover, the grain yield which is higher in W0+ than W++ condition. Increasing grain yield by applying N and P, which was more strongly in W0+ than in W++. In addition, the growth and nutrient uptake of rice are effected by nutrient availability, particularly P (native soil-P and applied P) which depends on soil-water regime. In anaerobic condition, the growth and nutrient uptake of plants are limited by physiological change in their roots. These may be the key to develop rice growing calendar and nutrient application in rainfed lowland ecosystems, in which water supply for rice in growing season is often insufficient from year to year. However, the responses of rice cultivars to N and P levels in different soil types under rainfed lowland conditions have not fully understood. Therefore, further study needs to examine responses of cultivars to N and P levels in different soil types of the rainfed lowland rice.