CHAPTER VI
CONCLUSION

1. Conclusion of the Experiment

1.1 Phosphorus application at the rates of 25, 35 and 45 kg of TSP per rai enhanced growth, yield and quality of all three sugarcane cultivars, i.e. K 90-112, K 86-161 and Phil 66-07. These values were significantly higher than the ones without phosphorus application, but there was no significant difference among the three rates. Phil 66-07 had higher growth, yield and quality, than K 86-161 and K 90-112, respectively.

1.2 Phosphorus application increased phosphorus content in leaf blade, leaf sheath and dry leaf but did not increase phosphorus content in stalk. Phosphorus did not have any effects on nitrogen and potassium contents in leaf sheath, leaf blade, dry leaf and stalk but reduced the nutrient contents in stalks. In contrast, application of phosphorus increased phosphorus contents in all parts of cane i.e. leaf sheaths, dry leaves, leaves and stalks.

1.3 Phosphorus contents in leaf sheath and leaf blade of K 86-161 cultivar were highest among the three cane cultivars followed by Phil 66-07 and K 90-112 respectively. In contrast, dry leaf phosphorus content was highest in K 90-112 and followed by Phil 66-07 and K 86-161.

1.4 Phosphorus contents in sugarcane juice from all treatments with phosphorus application were higher than the control (without P). There was no difference in the level of phosphorus content in the juice, even though more phosphorus was applied.

2. Recommendation

2.1 From the experiment, it was found that phosphorus affected cane growth, yield and quality. Therefore, chemical soil analysis is necessary to determine phosphorus status of the soil to calculate the appropriate rate of phosphorus application.

2.2 From the third top most visible dewlap leaf analysis, phosphorus was found to be lower than the critical value when cane was 100 days. This implied that there was not enough phosphorus for growth at later growing stage. Therefore, phosphorus application should be split in time and rate for efficient use of phosphorus.

2.3 Phil 66-07 had highest growth and yield in all the treatments studied, comparing to the other two cultivars. Therefore, Phil 66-07 is recommended to be planted in the experimental area while K 86-161 is also recommended as the second best cultivar.

2.4 The three cultivars performed better when phosphorus was applied as compared to control (without P). In this experiment, application of only 25 kg of TSP per rai is recommended for sugarcane planted in early rainy season.

3. Recommendation for Further Works

3.1 From the study, it was found that the three cultivars responded to phosphorus application with plateau yield at 25 kg/rai of TSP. However, more planted cultivars should be tested for response to phosphorus rates particularly at the lower rate than 25 kg/rai. Moreover, interaction of nitrogen, phosphorus and potassium should also be investigated to find the balanced ratio of the combination of three nutrients applied to obtain the maximum yield for a cultivar.

3.2 Investigation of late rainy season planting of sugarcane or cane planting with irrigation should be studied in response to phosphorus and other macro-nutrient application.