

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Study on the productivity of maize/lablab intercropping system in the Chiang Mai, Northern Thailand indicated:

- (i) Grain yields of maize were unaffected by intercropping. Instead, cutting practices of lablab at 40 DAS in the intercropping system produced highest grain yields among the all treatments.
- (ii) Intercropped maize and lablab yields, whether in terms of LER's for dry matter or ATER's for dry matter and protein yields indicated a definite advantage of intercropping in comparison with their monoculture yields.

Cutting reduced dry matter yields of lablab. However, such practices still found to be advantageous in the relative terms. In addition to the relative advantage, intercropped maize had also absolute advantage over monoculture by about 30% in terms of dry matter production. Cutting lablab in the intercrop, however, depressed this advantage slightly. This suggests the possibility of lablab use as a fodder.

- (iii) Cutting practices of lablab at 60 DAS were found to be least effective for grain yields of maize, dry matter yields of maize and lablab and input from nitrogen fixation in comparison with cutting at 40 DAS.
- (iv) Cutting lablab to the stubble height of 30 or 20 cm from the base did not make any significant differences to the yields of mono as well as intercrop system.
- (v) Monoculture lablab fixed highest amount of nitrogen. Cutting reduced amount of nitrogen fixation. However, at the final harvesting (130 DAS), reduction of N was less in treatments cutting at 40 DAS (37%) as compared with cutting at 60 DAS (71%) of intercrop-grown plants because of higher P fix coupled with increased accumulation of total N. In this study, intercropped lablab cutting at 40 DAS, derived a higher percentage of total nitrogen from fixation (88%) than the monoculture of same cutting.
- (vi) Combined dry matter yield of intercrop maize and lablab always excelled to the yield of mono maize. It proved that, maize/ lablab intercrop system with cutting practices has advantages in grain production but there could be more advantages for the total dry matter production.

6.2 Recommendations

The present study indicated greater yield advantage of intercropping system by cutting management of lablab at 40 DAS with no significant difference between treatments of different cutting heights. However, following recommendations is made for further research in order to fully understand the beneficial effects of lablab as an intercrop with maize.

- (i) Residual effects of lablab need to be assessed in order to understand the utilization of available mineral nitrogen and the organic matter for the following crops.
- (ii) Long term studies at least for 3 - 4 years on-station as well as on-farm are necessary for the effective evaluation of maize/lablab intercropping system.