Introduction

- Imperata grassland covers large areas of West Kalimantan with little production function.
- Rubber Agroforestry System type 3 (or RAS-3) can be established in Imperata land and provide rubber, perennial timber and fruit trees.
- Annual crops (rice, chilli, vegetables) are grown in the first year only.
- Legume Cover Crops include Mucuna, Flemingia, Crotalaria, Setaria and Chromolaena.
- Fast Growing Trees (FGTs) such as Paraserianthes falcatoria, Acacia mangium and Gmelina arborea can effectively shade out Imperata and also produce for pulpwood.

Rubber and fast growing trees (FGTs)

- All FGT species seriously affected growth of rubber trees; hence farmers cut down all remaining FGTs in the third year.
- All FGTs were only partly successful in controlling Imperata.
- Imperata managed to regrow in more than half of the plots.
- There was no statistically significant difference in control of Imperata or growth of rubber trees between the tested FGT species - Acacia, Paraserianthes and Gmelina.
- But rubber growth in FGT mixed plots was better than in Imperata or Chromolaena infested plots; but this was far less than growth of rubber growth in plots with legume crops.

Result and Conclusion

Rubber and cover crops

- Cover crops varied in their ability to suppress Imperata.
- Pueraria, a creeping legume was most effective followed by Mucuna.
- Both required regular 'weeding' to avoid their vines climbing strangling young rubber trees.
- Among erect legumes Flemingia proved better.
- Crotalaria was ineffective.
- Rubber trees in control plots (without cover crops) showed the slowest growth.

Conclusion

- LCC (Pueraria and Mucuna) effectively controlled Imperata, but required periodic 'weeding' to prevent strangling of rubber plants.
- Seeds of Pueraria and Flemingia were unavailable locally and Mucuna required repeated planting.
- FGTs (selected for their use as pulpwood source in future) only partly suppress Imperata growth.
- All FGTs, Acacia in particular, seriously affected growth of rubber trees from the start.
- Planting FGTs 2-3 years after planting rubber may be better, while Pueraria and Mucuna should be incorporated in these first few years.
- Most associated fruit trees did not survive the harsh condition of Imperata infested land.