NITROGEN CONTRIBUTION FROM FORAGE LEGUME IN MAIZE FARMING SYSTEM IN WEST TIMOR, INDONESIA

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INTRODUCTION

• Maize is the most important food crops cultivated in West Timor
• Growing cereals (rice and maize) in the same site in more than 2 years results in reducing soil fertility
• Legumes can improve soil fertility especially for Nitrogen
• Which legume fits in maize farming system in West Timor, Indonesia to increase soil fertility and produce forage
• The aim of this project:
  – to evaluate biomass production of herbaceous forage legumes in West Timor environment
  – to quantify potential nitrogen contribution from forage legumes in Maize farming system in West Timor, Indonesia
METHODOLOGY

The experiment applied Randomised Block Design
There were 11 treatments and 4 replications.
The treatments were
  - maize after maize,
  - maize after clitoria cut and remove,
  - maize after clitoria uncut,
  - maize after centrosema pascorum bunday cut and remove,
  - maize after centrosema pascorum bunday uncut,
  - maize after centrosema pascorum cavalcade cut and remove,
  - maize after centrosema pascorum cavalcade uncut,
  - maize after lab-lab cut and remove,
  - maize after lab-lab uncut,
  - maize after soybean cut and remove,
  - maize after soybean uncut
METHODOLOGY

2014
Agustus -- January
Sorghum

2015
February - Augustus
Legum/Maize

2016
Des - April
Maize
Management:
- Fertiliser: No fertiliser at first and second crops and 50 kg/ha of Urea for the maize (third crops)
- Weed: Full control
- Irrigation: 6 times flood irrigation (72.6 mm)
Legume performance

Data collection:
- Legume biomass production
- Maize biomass and grain yield after legumes
- Estimated N shoot uptake
RESULT AND DISCUSSION
Legume biomass grown in West Timor prior to a subsequent maize crop
Maize shoot biomass at anthesis (52 das)
Maize grain yield following maize or 5 forage legumes.
Maize performance after Legumes

Maize growth in uncut Clitoria plot is better than them in cut plot
Maize performance after Legumes

Maize growth in uncut Centrosema plot is better than them in cut plot
Estimated N uptake at anthesis (52 das)
Conclusion

• Clitoria milgara, Lab-lab, CP Cavalcade and CP Bunday grow well in West Timor, Indonesia
• Clitoria milgara, CP Cavalcade and CP Bunday are forage legumes that have highest contribution of nitrogen to maize crops
• Uncut legumes, as mulch, performs much better than legume cut and remove in terms of nitrogen contribution to maize crops
THANK YOU