

CHAPTER 8.0: APPENDICES

APPENDIX B

APPENDIX A

 The mean maize yield in *Gliricidia sepium*/maize intercrop and maize monocrop system

| Tree | Phosphorus 48 kg ha ⁻¹ | Nitrogen 20 kg ha ⁻¹ | Grain yield tons ha ⁻¹ |
|------|-----------------------------------|---------------------------------|-----------------------------------|
| none | 0 | 0 | 1.93 |
| none | 100 % | 0 | 2.07 |
| none | 0 | 50 % | 4.08 |
| none | 100 % | 50 % | 3.96 |
| Tree | 0 | 0 | 6.96 |
| Tree | 100 % | 0 | 6.77 |
| Tree | 0 | 50 % | 8.02 |
| Tree | 100 % | 50 % | 8.12 |

None = Maize monocrop, Tree = *G. sepium* agroforestry practice, 0 = no phosphorus and no nitrogen, 100 % full recommended dose of phosphorus, 50 % = half recommended dose of nitrogen.

APPENDIX B

The mean maize yield in *Sesbania sesban*/maize, *S macrantha*/maize intercrop and maize monocrop systems

| Tree | Phosphorus 48 kg ha ⁻¹ | Nitrogen 20 kg ha ⁻¹ | Grain yield tons ha ⁻¹ |
|---------------------|-----------------------------------|---------------------------------|-----------------------------------|
| None | 0 | 0 | 1.67 |
| None | 100 % | 0 | 1.91 |
| None | 0 | 50 % | 4.00 |
| None | 100 % | 50 % | 4.16 |
| <i>S. sesban</i> | 0 | 0 | 2.00 |
| <i>S. sesban</i> | 100 % | 0 | 2.90 |
| <i>S. sesban</i> | 0 | 50 % | 4.42 |
| <i>S. sesban</i> | 100 % | 50 % | 4.37 |
| <i>S. macrantha</i> | 0 | 0 | 2.47 |
| <i>S. macrantha</i> | 100 % | 0 | 3.13 |
| <i>S. macrantha</i> | 0 | 50 % | 3.84 |
| <i>S. macrantha</i> | 100 % | 50 % | 4.36 |

None = maize monocrop, 0 = no phosphorus and no nitrogen, 100 % = full recommended dose of phosphorus, 50 % = Half recommended dose of nitrogen

APPENDIX C

Experimental layout for *Gliricidia sepium*/maize intercrop and maize monocrop system.

Nitrogen rates: zero rate (0), quarter recommended dose (25 %) of 20 kg ha⁻¹, half recommended dose (50 %) of 40 kg ha⁻¹

Phosphorus rates: zero rate (0), half recommended dose (50 %) of 24 kg ha⁻¹, full recommended dose (100 %) of 48 kg ha⁻¹

C = Tree pruning regimes: C1 = no pruning, C2 = pruned once, C3 = pruned twice

The plots in bold were sampled for glomeromycotan species assessment.

Layout of Replicate 1 (Block 1)

| PLOT | PRUNING | NITROGEN | PHOSPHORUS |
|----------------|-----------|-----------|------------|
| plot1 | c1 | 0 | 100 |
| plot 2 | c3 | 0 | 100 |
| plot 3 | c2 | 25 | 100 |
| plot 4 | c2 | 50 | 100 |
| plot 5 | c1 | 50 | 100 |
| plot 6 | c1 | 50 | 50 |
| plot 7 | c3 | 50 | 100 |
| plot 8 | c1 | 0 | 50 |
| plot 9 | c3 | 50 | 50 |
| plot 10 | c3 | 0 | 50 |
| plot 11 | c2 | 50 | 50 |
| plot 12 | c3 | 0 | 0 |
| plot 13 | c1 | 0 | 0 |
| plot 14 | c2 | 50 | 0 |
| plot 15 | c3 | 50 | 0 |
| plot 16 | c1 | 50 | 0 |
| plot 17 | c3 | 25 | 0 |
| plot 18 | c1 | 25 | 0 |
| plot 19 | c1 | 25 | 100 |
| plot 20 | c3 | 25 | 100 |
| plot 21 | c2 | 25 | 0 |
| plot 22 | c1 | 25 | 50 |
| plot 23 | c2 | 25 | 50 |
| plot 24 | c3 | 25 | 50 |
| plot 25 | c2 | 0 | 50 |
| plot 26 | c2 | 0 | 0 |
| plot 27 | c2 | 0 | 100 |

Layout of replicate 2 (Block 2)

| PLOT | PRUNING | NITROGEN | PHOSPHORUS |
|----------------|-----------|-----------|------------|
| plot1 | c2 | 0 | 50 |
| plot 2 | c3 | 50 | 100 |
| plot 3 | c1 | 50 | 100 |
| plot 4 | c3 | 0 | 100 |
| plot 5 | c1 | 0 | 100 |
| plot 6 | c3 | 50 | 50 |
| plot 7 | c2 | 50 | 0 |
| plot 8 | c1 | 50 | 50 |
| plot 9 | c2 | 0 | 0 |
| plot 10 | c3 | 0 | 0 |
| plot 11 | c1 | 0 | 0 |
| plot 12 | c2 | 50 | 50 |
| plot 13 | c3 | 50 | 0 |
| plot 14 | c1 | 50 | 0 |
| plot 15 | c1 | 0 | 50 |
| plot 16 | c3 | 0 | 50 |
| plot 17 | c2 | 25 | 0 |
| plot 18 | c3 | 25 | 50 |
| plot 19 | c3 | 25 | 100 |
| plot 20 | c1 | 25 | 50 |
| plot 21 | c1 | 25 | 100 |
| plot 22 | c3 | 25 | 0 |
| plot 23 | c1 | 25 | 0 |
| plot 24 | c2 | 50 | 100 |
| plot 25 | c2 | 25 | 50 |
| plot 26 | c2 | 25 | 100 |
| plot 27 | c2 | 0 | 100 |

Layout of rep 3 (Block 3)

| PLOT | PRUNING | NITROGEN | PHOSPHORUS |
|----------------|-----------|-----------|------------|
| plot1 | c2 | 50 | 0 |
| plot 2 | c3 | 50 | 50 |
| plot 3 | c1 | 50 | 50 |
| plot 4 | c1 | 0 | 50 |
| plot 5 | c1 | 0 | 0 |
| plot 6 | c3 | 0 | 50 |
| plot 7 | c3 | 0 | 0 |
| plot 8 | c2 | 0 | 0 |
| plot 9 | c2 | 0 | 100 |
| plot 10 | c1 | 0 | 100 |
| plot 11 | c2 | 50 | 50 |
| plot 12 | c3 | 0 | 100 |
| plot 13 | c2 | 50 | 100 |
| plot 14 | c3 | 25 | 0 |
| plot 15 | c1 | 25 | 0 |
| plot 16 | c3 | 50 | 100 |
| plot 17 | c1 | 50 | 100 |
| plot 18 | c2 | 0 | 50 |
| plot 19 | c3 | 50 | 0 |
| plot 20 | c3 | 25 | 50 |
| plot 21 | c1 | 50 | 0 |
| plot 22 | c2 | 25 | 50 |
| plot 23 | c1 | 25 | 50 |
| plot 24 | c2 | 25 | 0 |
| plot 25 | c3 | 25 | 100 |
| plot 26 | c1 | 25 | 100 |
| plot 27 | c2 | 25 | 100 |

APPENDIX D

Experimental layout for *Sesbania sesban*/maize and *S. macrantha*/maize intercrop and maize monocrop systems.

Nitrogen rates: zero rate (0), quarter recommended dose (25 %) of 20 kg ha⁻¹, half recommended dose (50 %) of 40 kg ha⁻¹

Phosphorus rates: zero rate (0), half recommended dose (50 %) of 24 kg ha⁻¹, full recommended dose (100 %) of 48 kg ha⁻¹

Trees: none = no tree, sesban = *S. sesban*, macrantha = *S. macrantha*.

Tree density: 0 trees ha⁻¹, 7400 trees ha⁻¹ and 14800 trees ha⁻¹.

The plots in bold were sampled for assessment of Glomeromycotan fungi.

Layout of replicate 1 (Block 1)

| Plot | Tree species | Tree density | Nitrogen | Phosphorus |
|----------------|------------------|--------------|-----------|------------|
| Rep 1; Block 1 | | | | |
| plot 1 | sesban | 14800 | 50 | 100 |
| plot 2 | macrantha | 7400 | 50 | 100 |
| plot 3 | macrantha | 7400 | 50 | 0 |
| plot 4 | sesban | 14800 | 0 | 0 |
| plot 5 | sesban | 7400 | 0 | 0 |
| plot 6 | none | Void | 50 | 0 |
| plot 7 | sesban | 7400 | 50 | 100 |
| Rep 1; Block 2 | | | | |
| plot 1 | macrantha | 14800 | 50 | 100 |
| plot 2 | none | Void | 100 | 100 |
| plot 3 | sesban | 7400 | 50 | 0 |
| plot 4 | Macrantha | 14800 | 0 | 0 |
| plot 5 | none | Void | 0 | 0 |
| plot 6 | none | Void | 0 | 100 |
| plot 7 | sesban | 14800 | 0 | 100 |
| Rep 1; Block 3 | | | | |
| plot 1 | sesban | 7400 | 0 | 100 |
| plot 2 | none | Void | 50 | 100 |
| plot 3 | macrantha | 14800 | 50 | 0 |
| plot 4 | sesban | 14800 | 50 | 0 |
| plot 5 | Macrantha | 14800 | 0 | 100 |
| plot 6 | macrantha | 7400 | 0 | 0 |
| plot 7 | macrantha | 7400 | 0 | 100 |

Layout of replicate 2 (Block 2)

| Plot | Tree species | Tree density | Nitrogen | Phosphorus |
|-----------------------|------------------|--------------|-----------|------------|
| <i>Rep 2; Block 1</i> | | | | |
| plot 1 | sesban | 14800 | 0 | 100 |
| plot 2 | sesban | 14800 | 50 | 0 |
| plot 3 | sesban | 7400 | 0 | 100 |
| plot 4 | macrantha | 7400 | 0 | 100 |
| plot 5 | sesban | 14800 | 50 | 100 |
| plot 6 | sesban | 14800 | 0 | 0 |
| plot 7 | macrantha | 14800 | 0 | 0 |
| <i>Rep 2; Block 2</i> | | | | |
| plot 1 | none | void | 100 | 100 |
| plot 2 | macrantha | 7400 | 0 | 0 |
| plot 3 | none | void | 0 | 100 |
| plot 4 | none | void | 50 | 100 |
| plot 5 | sesban | 7400 | 50 | 0 |
| plot 6 | none | void | 50 | 0 |
| plot 7 | macrantha | 7400 | 50 | 100 |
| <i>Rep 2; Block 3</i> | | | | |
| plot 1 | macrantha | 14800 | 0 | 100 |
| plot 2 | macrantha | 14800 | 50 | 100 |
| plot 3 | sesban | 7400 | 0 | 0 |
| plot 4 | macrantha | 14800 | 50 | 0 |
| plot 5 | none | void | 0 | 0 |
| plot 6 | macrantha | 7400 | 50 | 0 |
| plot 7 | sesban | 7400 | 50 | 100 |

Layout of replicate 3 (Block 3)

| Plot | Tree species | Tree density | Nitrogen | Phosphorus |
|-----------------------|------------------|--------------|-----------|------------|
| <i>Rep 3; Block 3</i> | | | | |
| plot 1 | none | void | 100 | 100 |
| plot 2 | sesban | 7400 | 0 | 0 |
| plot 3 | sesban | 14800 | 0 | 100 |
| plot 4 | none | void | 50 | 100 |
| plot 5 | sesban | 14800 | 50 | 100 |
| plot 6 | macrantha | 14800 | 0 | 100 |
| plot 7 | sesban | 14800 | 50 | 0 |
| <i>Rep 3; Block 2</i> | | | | |
| plot 1 | sesban | 7400 | 50 | 100 |
| plot 2 | none | void | 50 | 0 |
| plot 3 | macrantha | 14800 | 0 | 0 |
| plot 4 | macrantha | 14800 | 50 | 100 |
| plot 5 | none | void | 0 | 100 |
| Plot 6 | macrantha | 7400 | 0 | 0 |
| Plot 7 | sesban | 7400 | 0 | 100 |
| <i>Rep 3; Block 3</i> | | | | |
| Plot 1 | macrantha | 7400 | 50 | 0 |
| Plot 2 | sesban | 7400 | 50 | 0 |
| Plot 3 | macrantha | 7400 | 50 | 100 |
| Plot 4 | macrantha | 14800 | 50 | 0 |
| Plot 5 | macrantha | 7400 | 0 | 100 |
| Plot 6 | none | void | 0 | 0 |
| Plot 7 | sesban | 14800 | 0 | 0 |