Analysis of Variations in Wood Anatomy of Hardwood Tree Species Growing in and around Some Iron Ore Mines of Odisha

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For
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(Forest Botany)

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2016
DEDICATED TO

MY

BELOVED PARENTS

&

ADORABLE SISTER
ACKNOWLEDGEMENT
There is quite an endless list of people to whom I express my sincere gratitude for all their contributions that helped me a lot to make this research a fabulous success.

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V. Vishnuprasad

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Declaration

I hereby declare that this thesis entitled “Analysis of Variations in Wood Anatomy of Hardwood Tree Species growing in and around some Iron Ore Mines of Odisha” is submitted for the fulfillment of the degree: “Doctor of Philosophy in Forestry (Forest Botany)” to the Forest Research Institute, Dehradun. I submit that this is a record of my original piece of work carried out in the Wood Anatomy Discipline, Forest Botany Division, Forest Research Institute, Dehradun. No part of this work has been submitted for any other degree or its equivalent and is entirely original.

(V. Vishnuprasad)
CERTIFICATE

This is to certify that this thesis “ANALYSIS OF VARIATIONS IN WOOD ANATOMY OF HARDWOOD TREE SPECIES GROWING IN AND AROUND SOME IRON ORE MINES OF ODISHA” submitted for the award of the degree of Doctor of Philosophy of the Forest Research Institute (Deemed University), Dehradun is a record of bonafide research carried out by Mr. V. Vishnuprasad under my supervision. No part of this has been submitted for any other degree before.

Place: Dehradun

Date: 18-10-16

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This is to certify that MR. V. VISHNUPRASAD enrolment number 13PHD290 carried out research work under Dr. SANGEETA GUPTA (Supervisor) of Forest Research Institute, Dehradun. The topic of the research registered with Forest Research Institute (Deemed) University was “ANALYSIS OF VARIATIONS IN WOOD ANATOMY OF HARDWOOD TREE SPECIES GROWING IN AND AROUND SOME IRON ORE MINES OF ODISHA". The scholar presented his work in the pre-thesis submission seminar held on 17th May, 2016 and the RAC found the work to be satisfactory and approves the work to be presented in the form of thesis for evaluation by examination for “Award of Ph.D degree” by Forest Research Institute Deemed University.

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C/o Dr. Sangeeta Gupta,
Scientist-F & Head,
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   (Dr. A.K. Tripathi)
   Registrar
   FRI (Deemed) University
# TABLE OF CONTENTS

ACKNOWLEDGEMENT

CERTIFICATES

LIST OF PLATES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

LIST OF PUBLICATIONS

## CHAPTER 1: INTRODUCTION

1.1 Origin of the problem ............................................................. 1
1.2 Overview of study area ........................................................... 3
1.3 Objectives of the study ............................................................ 8
1.4 Scope of the study ................................................................. 9

## CHAPTER 2: REVIEW OF LITERATURE

2.1 Effect of mining activities ...................................................... 11
2.2 Relation between wood anatomy and environmental stress .......... 12
  2.2.1 Effect of environmental stress on vessels ............................. 13
  2.2.2 Effect of environmental stress on fibres .............................. 15
  2.2.3 Effect of environmental stress on parenchyma ...................... 15
2.3 Environmental stress and specific gravity ............................... 16
2.4 Heavy metal content especially iron content ............................ 17
CHAPTER 3: MATERIALS AND METHODS ........................................ 18 – 36

3.1 Sampling and Collection ........................................... 18 – 29
  3.1.1 Collection of the stressed samples ....................... 18
  3.1.2 Collection of the control samples ....................... 25

3.2 Laboratory work ....................................................... 30 – 33
  3.2.1 Sectioning and permanent slides ...................... 30
  3.2.2 Maceration of wood samples ....................... 30
  3.2.3 Microscopic data collection ...................... 31
  3.2.4 Photomicrographs .................. 31
  3.2.5 Scanning Electron Microscopy .................. 31
  3.2.6 Spectroscopy to determine iron element content ....... 32
  3.2.7 Specific gravity determination .................. 32

3.3 Statistical Analysis .................................................. 33 – 36
  3.3.1 Comparison of quantitative features of wood microstructure between stressed samples and controls ....................... 33
  3.3.2 Comparison of qualitative features of wood microstructure between stressed samples and controls ....................... 34
  3.3.3 Determination of distance effect and corresponding analysis of wood microstructure across the quadrats ....................... 35

CHAPTER 4: RESULTS .......................................................... 37 – 177

4.1 Results for Mangifera indica ...................................... 37

4.2 Results for Shorea robusta ...................................... 45
4.3 Results for *Dalbergia latifolia* ................................................. 52
4.4 Results for *Zizyphus jujuba* ..................................................... 58
4.5 Results for *Eucalyptus globulus* ............................................... 64
4.6 Results for *Tamarindus indica* .................................................. 70
4.7 Results for *Artocarpus heterophyllus* ....................................... 77
4.8 Results for *Schleichera oleosa* ................................................ 82
4.9 Results for *Terminalia bellirica* .............................................. 87
4.10 Results for *Peltophorum pterocarpum* ..................................... 93
4.11 Results for *Alstonia scholaris* ................................................ 99
4.12 Results for *Bombax ceiba* ..................................................... 106
4.13 Results for *Ficus benghalensis* ............................................... 112
4.14 Results for *Kydia calycina* .................................................... 118
4.15 Results for *Syzygium cuminii* ............................................... 124
4.16 Results for *Tectona grandis* .................................................. 131
4.17 Results for *Diospyros melanoxylon* ........................................ 138
4.18 Results for *Pongamia pinnata* ................................................ 144
4.19 Results for *Acacia auriculiformis* ......................................... 150
4.20 Results for *Madhuca longifolia* ............................................... 157
4.21 Results for *Psidium guajava* .................................................. 162
4.22 Results for *Buchanania lanzan* .............................................. 167
4.23 Results for iron element content (in ppm) for all species ............... 174
4.24 Results of scanning electron microscopy .................................. 176
CHAPTER 5: DISCUSSION .....................................................................................178 – 187

5.1 Comparison of stressed wood samples with the controls .................. 179

5.2 Analysis of the anatomical features with distance from the mines .... 185

5.3 Estimated iron element content in the wood of controls and stressed samples .................................................................................. 186

CHAPTER 6: CONCLUSIONS ..............................................................................188 – 191

CHAPTER 7: FUTURE PROSPECTS .................................................................192 – 194

SUMMARY ........................................................................................................... 195 – 203

REFERENCES ..................................................................................................... 204 – 224
LIST OF PLATES

Plate I. The three iron ore mining sites and the forests around them…… ……… 6
Plate II. Satellite images of the three iron ore mining sites under study………… 7
Plate IIIA. Differences in vessel features between control and stressed samples of
Mangifera indica………………………………………………………………… 41
Plate IIIB. Differences in fibre and ray features between control and stressed samples of
Mangifera indica………………………………………………………………… 42
Plate IVA. Differences in vessel features between control and stressed samples of
Shorea robusta…………………………………………………………………… 48
Plate IVB. Differences in fibre and ray features between control and stressed samples of
Shorea robusta…………………………………………………………………… 49
Plate VA. Differences in vessel dimensions between control and stressed samples of
Dalbergia latifolia………………………………………………………………… 55
Plate VB. Differences in fibre and ray features between control and stressed samples of
Dalbergia latifolia………………………………………………………………… 56
Plate VIA. Differences in vessel and ray features between control and stressed samples of
Zizyphus jujuba…………………………………………………………………… 61
Plate VIB. Differences in fibre dimensions between control and stressed samples of
Zizyphus jujuba…………………………………………………………………… 62
Plate VIIA. Differences in vessel features between control and stressed samples of
Eucalyptus globulus……………………………………………………………… 67
LIST OF TABLES

Table 1A. Details of trees from which stressed samples collected from the mining sites Of Odisha………………………………………………………………       21 - 25

Table 1B. Details of the trees from which control samples collected from forests of Dhanbad district………………………………………………………………….       26 - 27

Table 1C. Details of control samples collected from the Xylarium (DDw)……… 28 - 29

Table 2A. t-test result for control and stressed samples of *Mangifera indica* for different wood anatomical parameters…………………………………………… 39

Table 2B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Mangifera indica*……………… 40

Table 2C. ANOVA table for stressed *Mangifera indica* samples along the distance from the mines……………………………………………………………………. 43

Table 2D. Estimated values of specific gravity and iron content for *Mangifera indica* samples………………………………………………………………….. 44

Table 3A. t-test table for control and stressed samples of *Shorea robusta* for different wood anatomical parameters……………………………………………………. 46

Table 3B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Shorea robusta*………………… 47

Table 3C. ANOVA table for stressed *Shorea robusta* samples along the distance from the mines…………………………………………………………………….. 50
Table 3D. Estimated values of specific gravity and iron content for *Shorea robusta* samples................................................................. 51

Table 4A. t-test table for control and stressed samples of *Dalbergia latifolia* for different wood anatomical parameters.............................................. 53

Table 4B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Dalbergia latifolia*....................... 54

Table 4C. t-test table for stressed *Dalbergia latifolia* samples along the distance from the mines................................................................. 57

Table 4D. Estimated values of specific gravity and iron content for *Dalbergia latifolia* samples........................................................................ 57

Table 5A. t-test table for control and stressed samples of *Zizyphus jujuba* for different wood anatomical parameters.............................................. 59

Table 5B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Zizyphus jujuba*....................... 60

Table 5C. t-test table for stressed *Zizyphus jujuba* samples along the distance from the mines........................................................................ 63

Table 5D. Estimated values of specific gravity and iron content for *Zizyphus jujuba* samples........................................................................ 63

Table 6A. t-test table for control and stressed samples of *Eucalyptus globulus* for different wood anatomical parameters.............................................. 65

Table 6B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Eucalyptus globulus*....................... 66

Table 6C. Estimated values of specific gravity and iron content for *Eucalyptus globulus* samples........................................................................ 69
<table>
<thead>
<tr>
<th>Table 7A.</th>
<th>t-test table for control and stressed samples of <em>Tamarindus indica</em> for different wood anatomical parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>........................................................................................................ 71</td>
</tr>
<tr>
<td>Table 7B.</td>
<td>Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of <em>Tamarindus indica</em></td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 72</td>
</tr>
<tr>
<td>Table 7C.</td>
<td>t-test table for stressed <em>Tamarindus indica</em> samples along the distance from the mines</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 75</td>
</tr>
<tr>
<td>Table 7D.</td>
<td>Estimated values of specific gravity and iron content for <em>Tamarindus indica</em> samples</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 76</td>
</tr>
<tr>
<td>Table 8A.</td>
<td>t-test table for control and stressed samples of <em>Artocarpus heterophyllus</em> for different wood anatomical parameters</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 78</td>
</tr>
<tr>
<td>Table 8B.</td>
<td>Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of <em>Artocarpus heterophyllus</em></td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 79</td>
</tr>
<tr>
<td>Table 8C.</td>
<td>Estimated values of specific gravity and iron content for <em>Artocarpus heterophyllus</em> samples</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 81</td>
</tr>
<tr>
<td>Table 9A.</td>
<td>t-test table for control and stressed samples of <em>Schleichera oleosa</em> for different wood anatomical parameters</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 83</td>
</tr>
<tr>
<td>Table 9B.</td>
<td>Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of <em>Schleichera oleosa</em></td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 84</td>
</tr>
<tr>
<td>Table 9C.</td>
<td>t-test table for stressed <em>Schleichera oleosa</em> samples along the distance from the mines</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 86</td>
</tr>
<tr>
<td>Table 9D.</td>
<td>Estimated values of specific gravity and iron content for <em>Schleichera oleosa</em> samples</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 86</td>
</tr>
<tr>
<td>Table 10A.</td>
<td>t-test table for control and stressed samples of <em>Terminalia bellirica</em> for different wood anatomical parameters</td>
</tr>
<tr>
<td></td>
<td>........................................................................................................ 88</td>
</tr>
</tbody>
</table>
Table 10B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Terminalia bellirica* ........................................... 89

Table 10C. Estimated values of specific gravity and iron content for *Terminalia bellirica* samples ............................................................................................................. 92

Table 11A. t-test table for control and stressed samples of *Peltophorum pterocarpum* for different wood anatomical parameters ......................................................... 94

Table 11B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Peltophorum pterocarpum* ..................... 95

Table 11C. t-test table for stressed *Peltophorum pterocarpum* samples along the distance from the mines ........................................................................................................ 98

Table 11D. Estimated values of specific gravity and iron content for *Peltophorum pterocarpum* samples .................................................................................................... 98

Table 12A. t-test table for control and stressed samples of *Alstonia scholaris* for different wood anatomical parameters ......................................................... 100

Table 12B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Alstonia scholaris* ............................. 101

Table 12C. t-test table for stressed *Alstonia scholaris* samples along the distance from the mines .............................................................................................................. 104

Table 12D. Estimated values of specific gravity and iron content for *Alstonia scholaris* samples .............................................................................................................. 105

Table 13A. t-test table for control and stressed samples of *Bombax ceiba* for different wood anatomical parameters ................................................................. 107

Table 13B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Bombax ceiba* .............................................. 108
Table 13C. Estimated values of specific gravity and iron content for *Bombax ceiba* samples…………………………………………………………………………… 111

Table 14A. t-test table for control and stressed samples of *Ficus benghalensis* for different wood anatomical parameters…………………………………………………………… 113

Table 14B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Ficus benghalensis*………………………… 114

Table 14C. t-test table for stressed *Ficus benghalensis* samples along the distance from the mines……………………………………………………………………………… 116

Table 14D. Estimated values of specific gravity and iron content for *Ficus benghalensis* samples……………………………………………………………………………… 117

Table 15A. t-test table for control and stressed samples of *Kydia calycina* for different wood anatomical parameters…………………………………………………………… 119

Table 15B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Kydia calycina*………………………… 120

Table 15C. Estimated values of specific gravity and iron content for *Kydia calycina* samples……………………………………………………………………………… 123

Table 16A. t-test table for control and stressed samples of *Syzygium cuminii* for different wood anatomical parameters…………………………………………………………… 125

Table 16B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Syzygium cuminii*………………………… 126

Table 16C. t-test table for stressed *Syzygium cuminii* samples along the distance from the mines……………………………………………………………………………… 129

Table 16D. Estimated values of specific gravity and iron content for *Syzygium cuminii* samples……………………………………………………………………………… 130
Table 17A. t-test table for control and stressed samples of *Tectona grandis* for different wood anatomical parameters .............................................................. 132

Table 17B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Tectona grandis* .............................................. 133

Table 17C. ANOVA table for stressed *Tectona grandis* samples along the distance from the mines .............................................................. 136

Table 17D. Estimated values of specific gravity and iron content for *Tectona grandis* samples ..................................................................................... 137

Table 18A. t-test table for control and stressed samples of *Diospyros melanoxylon* for different wood anatomical parameters .......................................................... 139

Table 18B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Diospyros melanoxylon* ......................... 140

Table 18C. ANOVA table for stressed *Diospyros melanoxylon* samples along the distance from the mines .............................................................. 143

Table 18D. Estimated values of specific gravity and iron content for *Diospyros melanoxylon* samples ..................................................................................... 143

Table 19A. t-test table for control and stressed samples of *Pongamia pinnata* for different wood anatomical parameters .......................................................... 145

Table 19B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Pongamia pinnata* ................................. 146

Table 19C. Estimated values of specific gravity and iron content for *Pongamia pinnata* samples ..................................................................................... 149

Table 20A. t-test table for control and stressed samples of *Acacia auriculiformis* for different wood anatomical parameters .......................................................... 151
Table 20B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Acacia auriculiformis* …………………. 152

Table 20C. t-test table for stressed *Acacia auriculiformis* samples along the distance from the mines…………………………………………………………………… 155

Table 20D. Estimated values of specific gravity and iron content for *Acacia auriculiformis* samples……………………………………………………………………. 156

Table 21A. t-test table for control and stressed samples of *Madhuca longifolia* for different wood anatomical parameters…………………………………… 158

Table 21B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Madhuca longifolia*……………… 159

Table 21C. Estimated values of specific gravity and iron content for *Madhuca longifolia* samples…………………………………………………………………… 161

Table 22A. t-test table for control and stressed samples of *Psidium guajava* for different wood anatomical parameters…………………………………… 163

Table 22B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Psidium guajava*………………… 164

Table 22C. Estimated values of specific gravity and iron content for *Psidium guajava* samples…………………………………………………………………… 166

Table 23A. t-test table for control and stressed samples of *Buchanania lanzan* for different wood anatomical parameters…………………………………… 168

Table 23B. Fisher’s exact test for comparing qualitative wood anatomical features between control and stressed samples of *Buchanania lanzan*………………….. 169
Table 23C. Estimated values of specific gravity and iron content for Buchanania lanzan samples……………………………………………………………………………… 171

Table 24A. Compiled result of the t-test carried out for comparing quantitative features of stressed wood samples with the control samples………………………… 172

Table 24B. Compiled result of the t-test and Anova carried out to study the distance effect of stressed samples from the core of the mines to the fringes……………… 173
LIST OF FIGURES

Figure 1. Diagrammatic representation of systematic sampling method of sample collection ................................................................. 18

Figure 2. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Mangifera indica ............... 39

Figure 3. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Shorea robusta ............... 47

Figure 4. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Dalbergia latifolia ............... 54

Figure 5. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Zizyphus jujuba ............... 60

Figure 6. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Eucalyptus globulus ............... 66

Figure 7. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Tamarindus indica ............... 72

Figure 8. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Artocarpus heterophyllus ....... 79

Figure 9. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of Schleichera oleosa ............... 84

Figure 10. Graph showing the comparative values (means) of various wood anatomical
features for control and stressed samples of *Terminalia bellirica*........... 89

Figure 11. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Peltophorum pterocarpum*... 95

Figure 12. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Alstonia scholaris*............. 101

Figure 13. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Bombax ceiba*................. 108

Figure 14. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Ficus benghalensis*............. 114

Figure 15. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Kydia calycina*.............. 120

Figure 16. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Syzygium cuminii*.............. 126

Figure 17. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Tectona grandis*.............. 133

Figure 18. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Diospyros melanoxylon*...... 140

Figure 19. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Pongamia pinnata*............. 146

Figure 20. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Acacia auriculiformis*............. 152
Figure 21. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Madhuca longifolia*…………. 159

Figure 22. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Psidium guajava*…………….. 164

Figure 23. Graph showing the comparative values (means) of various wood anatomical features for control and stressed samples of *Buchanania lanzan*……………… 169

Figure 24. Graph (of means) of estimated iron content for all the 22 species studied. 174
<table>
<thead>
<tr>
<th></th>
<th>Abbreviation</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ANOVA</td>
<td>Analysis of Variance</td>
<td></td>
</tr>
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<td>2.</td>
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<td>Bolani Ore Mines</td>
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<td>3.</td>
<td>BOM</td>
<td>Bolani Ore Mines</td>
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<td>4.</td>
<td>BSI</td>
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<td>5.</td>
<td>CF</td>
<td>Crystal Frequency</td>
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<td>7.</td>
<td>DBH</td>
<td>Diameter at Breast Height</td>
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<td>DDw</td>
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<td>DPX</td>
<td>Dimethyl Phthalate Xylene</td>
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<td>Earlywood (in <em>Tectona grandis</em>)</td>
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<td>Fibre Wall Thickness</td>
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<td>GIS</td>
<td>Geographical Information System</td>
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<td>Global Positioning System</td>
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<td>L</td>
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<td>Lines (in sampling collection)</td>
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</tr>
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</tr>
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LIST OF PUBLICATIONS


5. **Vishnuprasad Varadarajan, Sangeeta Gupta and Ankita Gupta (2017).** Variations in the secondary xylem of hardwood trees growing in the oldest iron ore mines of Odisha, India. *Trees – Structure and Function.* Published online. ISSN 0931-1890. DOI 10.1007/s00468-017-1562-2