

LIST OF TABLES

Table 2.1 Demand of Gasoline and Diesel in India (Courtesy IOC)	17
Table 2.2 Properties of Diesel, Biodiesel Blend (B20) and Biodiesel [6].....	18
Table 2.3 Comparison of Exhaust Emissions Due to Diesel oil and Biodiesel Blends [34].....	28
Table 2.4 Summary of Studies Based on Thermal Performance and Emission Characteristics.....	54
Table 2.5 Studies Reported with Karanja Biodiesel On Thermal Performance and Emissions at Constant Compression Ratio	63
Table 2.6 Studies with Varying Compression Ratios For Different Biodiesels Other Than Karanja	63
Table 2.7 Summary of Studies On Combustion Analysis	72
Table 2.8 Summary of Studies Carried on Multi-objective Optimization.....	76
Table 2.9 Summary Of Studies Carried Using ANN	80
Table 2.10 Various types of studies using Karanja biodiesel at constant compression ratio	81
Table 3.1 Technical Specifications of Experimental Test Rig	86
Table 3.2 Technical Specifications of VCR Diesel Engine.....	89
Table 3.3 Technical Specifications of Eddy Current Dynamometer.....	97
Table 3.4 Technical Specifications of the Load Cell Used.....	99
Table 3.5 Technical details of Injection pressure sensor.....	103
Table 3.6 Range, Resolution and Accuracy of Exhaust Measurement Systems.....	107
Table 3.7 Technical Specifications of Exhaust Gas Analyzer.....	108
Table 3.8 Technical Details of the Smoke Meter.....	112
Table 4.1 Properties of Karanja Biodiesel (Courtesy Mint Biofuels).....	118
Table 4.2 Properties of Different Tested Fuels.....	119
Table 4.3 Uncertainty of Performance Parameters at Maximum and Minimum Loads.....	122
Table 4.4 Crank Angle Data for different CRs for SOC, Peak CP and EOC (Reproduced from Figures 4.70–4.75).....	185
Table 4.5 Comparison of Peak Net Heat Release Rate of Karanja Biodiesel with that of Diesel Oil (Reproduced From Figures 4.77-4.82)	192
Table 4.6 Comparison of Rate of Pressure Rise of Karanja Biodiesel With that of Diesel Oil (Reproduced From Figures 4.84-4.89)	199