

Indian Council of Forestry Research & Education
(An Autonomous Body of the Ministry of Environment & Forests, Govt. of India)

ABSTRACT OF COMPLETED RESEARCH PROJECT

Institute: Forest Research Center, (Institute of Wood Science and technology, Bangalore) Hyderabad.

Division: N.A.

1. **Project title and Code:** Screening on natural populations of *Lagerstroemia* spp. for domestication/X04

2. **Principal Investigator:** Dr. G.R.S. Reddy Scientist –E

3. A. ii). Co – PI: Nil

4. **Duration of the Project:** From November 2003 to March 2008

5. **Location:** Forest Research Center, Hyderabad

6. **Objectives:**

- i. Screen (Survey, identification and selection of) natural populations
- ii. Collect the germplasm (seeds and cuttings) ,
- iii. Raise individuals/ families for creating breeding populations

Major findings: A total of sixty populations were surveyed, identified, and studied based on provenance delimitation criteria for the parameters such as on stem form, height and GBH, selected some of the populations that are known to be better than the others for these parameters.

The list of places studied is as follows: *Lagerstroemia parviflora*: 1. GBM Range, Peddachervu, Srisailam, Kurnool (dist) 2. Kalavagunta, Punganur, Chitoor (west), 3. Thimmasamudram, Punganur, Chitoor (west), 4. Pulusumamidi Compartment 40, VRPuram, Bhadrachalam (South), 5. Kawal Compartment 190, Indanpally, Jannaram, 6. Nelakota Compartment 11, Lakkavaram, Bhadrachalam 7. Marringuda Compartment 4, Lakkavaram, Bhadrachalam, 8. Gudepadu Compartment 35, Amararam, Paloncha, 9. Pochavaram, Bhadrachalam, 10. Nelakota Compartment 11, Lakkavaram, Bhadrachalam, 11. Marringuda Compartment 2, Lakkavaram, Bhadrachalam, 12. Buruguwada V.R. puram, Bhadrachalam, 13. Narsapur (Narsapur - Medak 35 km West of road), Medak , 14. Mulugu Medak (Dist) Medak (Dist), 15. Rayachoti-Saanipaya, Pedda Bidiki, 16. Rayachoti-Saanipaya, Jarikinda H.W. Harijanwada, 17. Thimmanayinipalli, Thirupathi Division , 18. Mamandur South, Thirupathi Division , 19.

Mamandur North, Thirupathi Division, 20. Karkaubadi Beat, Thirupathi Division, 21. Srisailam, On way to Peddacheruvu 25kms from Srisailam, Kurnool (Dist), 22. East of MGLIP, Kollapur, Mahabubnagar Dist, 23. Kaomba, Sirpur, Kagaznagar, Adilabad (Dist), 24. Garlapet, Sirpur, Kagaznagar, 25. Chamla West, Rangampeta Range, 26. Nagapatla Beat East, Rangampeta Range, 27. Nagapatla West, Rangampeta Range, 28. Mulakalpally, Paloncha,, Paloncha, Khammam (Dist), 29. Talakona East, Rangampeta Range, 30. Mulugu behind FRC Research Station, Siddipet Forest range, Medak, 31. Ganjam South beat (1192, 1193 and 1194 Compartments) Sadasivpet, Zaheerabad, Medak (Dist), 32. Balapally West beat (1201, 1202, 1203 and 1204), Rangampeta Range, 33. GMB Range, Nandhyal, Kurnool (Dist), 34. Tirumala Papanashanam beat, Rangampeta Range, 35. Alipiri Beat On way to Zoo Park, Rangampeta Range, 36. Kodur , Rangampeta Range, 37. Devarakonda (Bakarapeta beat) Kadatulakonda, Rangampeta Range, 38. Talakona-Jalari preservation plot. (Nalaberi), Rangampeta Range, 39. S.E. Palem, Rajampeta Division, 40. Peddur, Rajampeta Division, 41. Bavikadapalli, Rajampeta Division, 42. Kodivengammabavi-presentation plot, Rajampeta Division, 43. Lebakuvaripalli, Rajampeta Division, 44. Eedigapalli, Rajampeta Division, 45. Annasamudram, Rajampeta Division, 46. Dasarapalli, Rajampeta Division, 47. M Botimedhapalli p, Rajampeta Division, 48. Chenchulakshmpuram , Koduru, Rajampet, 49. Gadela, Koduru, Rajampet, 50. Gandhinagar, Koduru, Rajampet, 51. Gadela Anmdhathi wada A.W., Koduru, Rajampet, 52. Nakanpally S.T. Colony, Koduru, Rajampet , *Lagerstroemia lanceolata*: 53., Dandeli (Bhagwathy Road 4 km) East Darwar, 54. Addageri behind deep forest (6 km), Haliyal Darwar, 55. Kannegiri, Darwar, 56. Tathihala, Haliyal, Darwar, 57. Dauginalla south, Yellapur Forest Division, Darwar, 58. Bhagwathy, Haliyal, Darwar, 59. Addageri, Haliyal, Darwar and 60. Dandeli, Darwar.

The *Lagerstroemia* populations had exhibited the best GBH in location 5. *Lagerstroemia parviflora*, Kawal Compartment 190, Indanpally, Jannaram at 157.8 cm girth, followed by 59. *Lagerstroemia lanceolata*, Addageri, Haliyal, Darwar with 133.7 cm girth at breast height, 15. *Lagerstroemia parviflora*, Rayachoti-Saanipaya, Pedda Bidiki, (109.1 cm) 38. *Lagerstroemia parviflora*, Talakona-Jalari preservation plot. (Nalaberi), Rangampeta Range (104.3 cm), 12. *Lagerstroemia parviflora*, Buruguwada V.R. puram, Bhadrachalam (104.2 cm), 8. *Lagerstroemia parviflora*, Gudepadu Compartment 35, Amararam, Paloncha (104.2), 42. *Lagerstroemia parviflora*, Kodivengammabavi-presentation plot, Rajampeta Division (103.8), 56. *Lagerstroemia lanceolata*, Tathihala, Haliyal, Darwar (103.6), 2. *Lagerstroemia parviflora*, Kalavagunta, Punganur, Chitoor (west) (103.2), 34. *Lagerstroemia parviflora*, Tirumala Papanashanam beat, Rangampeta Range (103.2 cm), and 17. *Lagerstroemia parviflora*, Thimmanayinipalli, Thirupathi Division (102 cm) are statistically at par with one another. However, for a given girth range the heights have varied greatly from location to location as given below:

The *Lagerstroemia* populations had exhibited the best heights in location 53. *Lagerstroemia lanceolata*, Dandeli (Bhagwathy Road 4 km) East Darwar at 23.4 m mean height of the population which is statistically significant followed by, 59, Addageri, Haliyal, Darwar (16.05 m) 4. Pulusumamidi Compartment 40, VRPuram, Bhadrachalam (South) (15.65 m) which are in turn at par statistically. The others are 55. Kannegiri, Darwar, (13.5 m) 54. Addageri behind deep forest (6 km), Haliyal Darwar (13.4 m) 1. *Lagerstroemia parviflora*, GBM Range, Peddachervu, Srisailam, Kurnool (dist) (13.3 m), 60. *Lagerstroemia lanceolata*, Dandeli, Darwar, (13.07m) 56. *Lagerstroemia lanceolata*, Tathihala, Haliyal, Darwar, 58. *Lagerstroemia lanceolata*, Bhagwathy, Haliyal, Darwar, 57. *Lagerstroemia lanceolata*, Dauginalla south, Yellapur Forest Division, Darwar, 28. *Lagerstroemia parviflora*, Mulakalpally, Paloncha,, Paloncha, Khammam (Dist), 10. *Lagerstroemia parviflora*, Nelakota Compartment 11, Lakkavaram, Bhadrachalam, 11. *Lagerstroemia parviflora*, Marriguda Compartment 2, Lakkavaram, Bhadrachalam, 5. *Lagerstroemia parviflora*, Kawal Compartment 190, Indanpally, Jannaram, 2. *Lagerstroemia parviflora*, Kalavagunta, Punganur, Chitoor (west), 4. *Lagerstroemia parviflora*, Pulusumamidi Compartment 40, VRPuram, Bhadrachalam (South), 12. *Lagerstroemia parviflora*, Buruguwada V.R. Puram, Bhadrachalam are arranged in the descending order of heights which are above 12 m in mean height.

Vegetative propagation from different collections, seasons and hormonal concentrations under polytunnel and mist chamber conditions proved to be not successful. The species was found to be hard to root. It was observed that there is a seed borer attack in nature damaging 90 per cent of the seed on the tree itself in most of the *L. parviflora* forests. It is not seen in *L. lanceolata*.

7. Shortfalls, if any : Nil
8. Funding agency (ICFRE/Name of external agency) : ICFRE
9. Amount sanctioned : Rs. 0.50 Lakhs
10. Expenditure incurred : Rs. 0.47 Lakhs
11. Publications : Nil
12. Patent No., if any : Nil
13. Technology developed for user groups :

The Plus trees and their populations were studied and based on quantitative parameters and statistical analysis selected certain populations with 10 individuals per population and from best localities seed has been collected. Attempts were made to propagate them vegetatively but not succeeded. The study identified thirty very good populations that can be used in future research development program.

14. Whether technology is transferred to any user group : No

a. If yes

- i. Name of the technology :**
- ii. Year of transfer :**
- iii. Method of transfer :**
- iv. User groups and their response, if any :**
- v. Amount received :**

b. If no, reasons for not transferring the technology:

Four interactive seminars were conducted on tree improvement and breeding aspects to higher officials in State Forest Department. So far this species is only planted by the State. However, recently farmers are evincing interest in the species. The superior germplasm needs to be multiplied and distributed for its cultivation on farmers field.

15. Any other information : Nil

16. Reference of Completion Report (For ICFRE only) :
