

database and the phylogenetic tree was constructed using MEGA 6 [16, 17].

RESULTS

The present study focused primarily on isolating and screening the laccase producing fungi from forest litter of Western Ghats (South India). Eleven fungal isolates were isolated from soil samples. The Potato Dextrose Agar was used for maintenance of fungal isolates. They were qualitatively screened with Guaiacol as a substrate for their future production capacity of laccase. The potato dextrose agar plates which contain 0.02% Guaiacol were inoculated with all fungal isolates and incubated at 30°C for 5 days. **Table 1**, shows the results of screening tests. The fungal isolates developed reddish brown halo around the colonies after 5 days of incubation, indicates positive for laccase production and lack of reddish brown halo indicates negative for laccase production. The two elite fungal isolates *Talaromyces funiculosus* (3cm) and *Penicillium*

corylophilum (5cm) showed good laccase activity on Guaiacol plate test. Similar work carried out by [18] isolated laccase producing fungi on PDA plates containing 4 mM of guaiacol showed reddish brown oxidation zone. Rehan et al. [18] also screened laccase producers such as *Trichoderma harzianum* on potato dextrose agar supplemented with 0.04% guaiacol. The *Talaromyces funiculosus* and *Penicillium corylophilum* elite fungal isolates showed the maximum laccases production of 0.00096 U/ml and 0.00033 U/ml in Potato dextrose bouillon following 15 days of incubation at room temperature. **Figure 3 and Figure 4** describes the molecular characterization of elite fungal isolates [19]. Senthivelan et al. [18] reported the laccase activity of white rot fungus 3.2 U/ml was measured by UV-Visible spectrophotometer using guaiacol as a substrate. Rehan et al. [18] reported the laccase production of 1.479 U/ml by *Trichoderma harzianum* which was measured by UV-Visible spectrophotometer using guaiacol as a substrate.

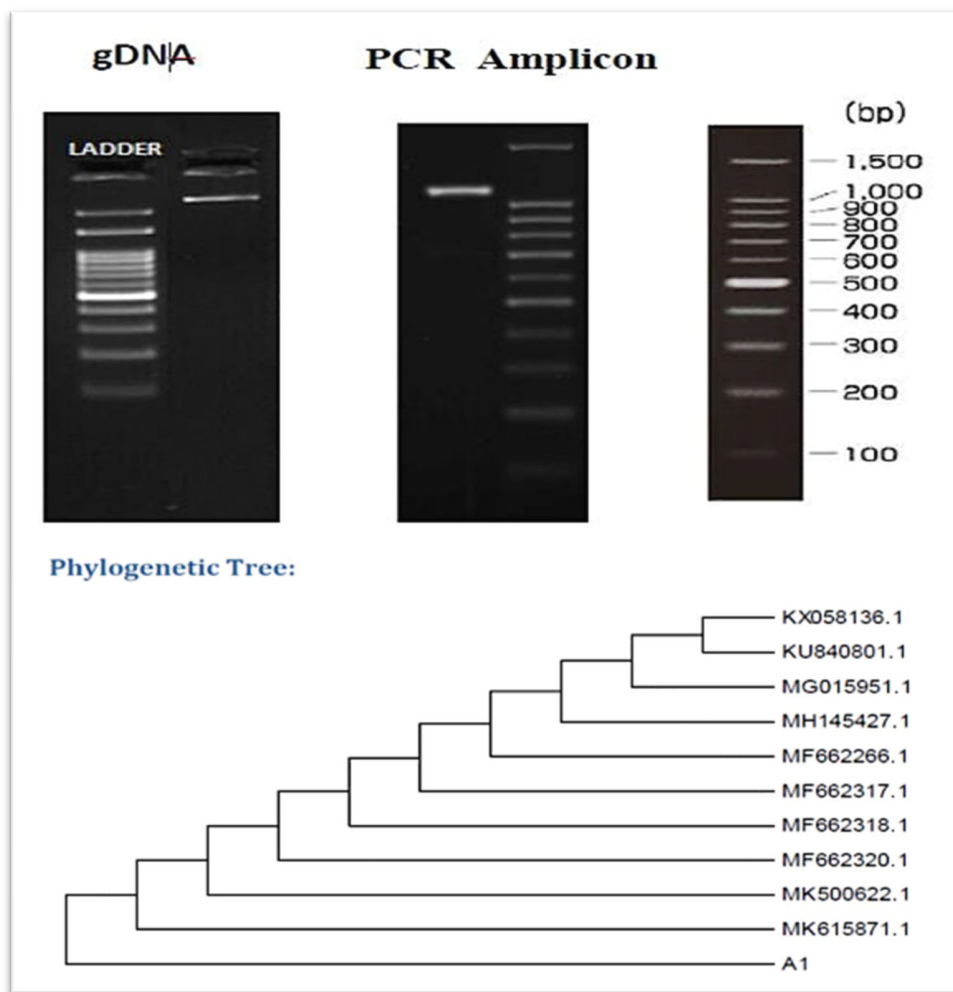


Figure 3. gDNA and Amplicon QC data of *Talaromyces funiculosus*.

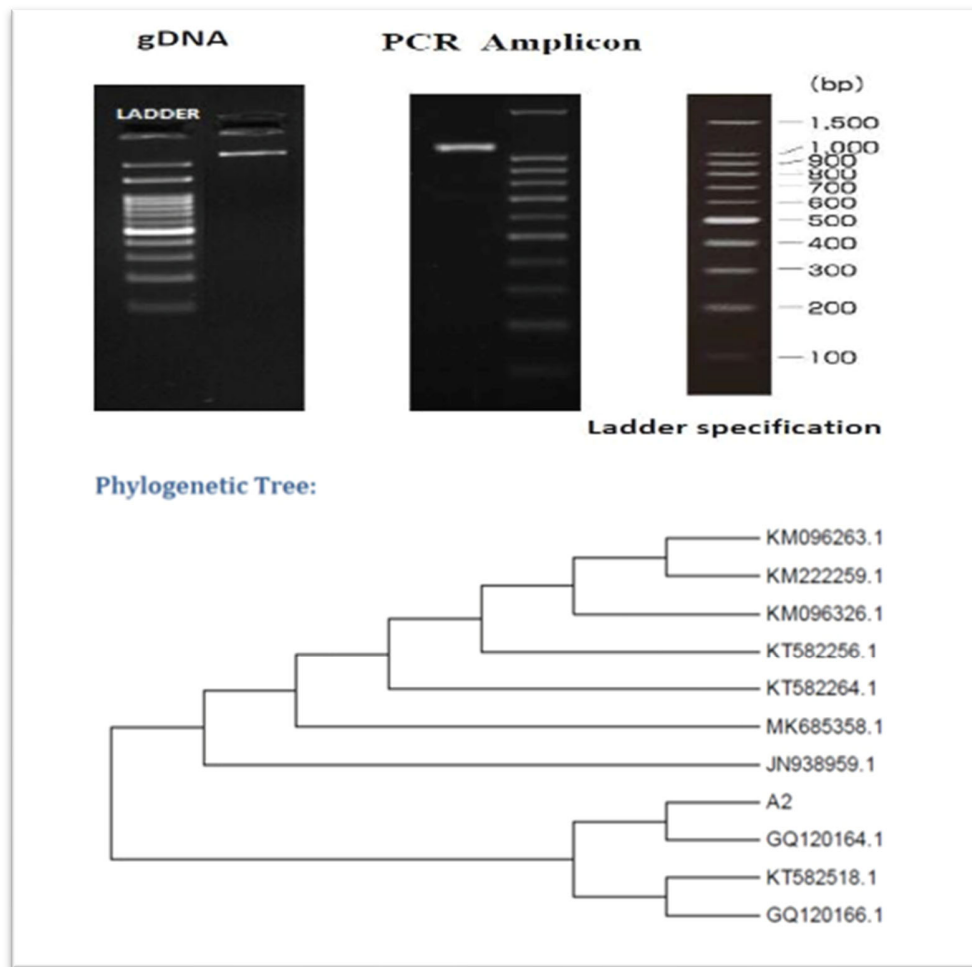


Figure 4. gDNA and Amplicon QC data of *Penicillium corylophilum*.

CONCLUSION

The two elite fungal isolates *Talaromyces funiculosus* and *Penicillium corylophilum* were good laccase producers from above screening process can be further used in development of potential consortium for composting of plant wastes.

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