

Processed data: Tables and Figures for Chapter 2

Table 1: Number, multilocus genotype (MLG) and origin of the *Fusarium circinatum* isolates used in this study

Isolate number	MLG	Plant host	Geographic origin	Reference
FC101	MS10	<i>P. patula</i>	Montahills, KZN	(Fru et al, unpublished)
64NG	MS10	<i>P. patula</i>	Ngodwana, Mpumalanga	(Fru et al, unpublished)
FC172	MS10	<i>P. patula</i>	Pine Valley, KZN	(Fru et al, unpublished)
CMW53348	MLG11	<i>P. patula</i>	Soutpansberg, Limpopo	(Swett et al., 2014)
CMWF2632	MLG11	Grasses	Soutpansberg, Limpopo	(Swett et al., 2014)
CMWF1294	MLG33	Grasses	Tokai, Western Cape	(Swett et al., 2014)
CMWF1243	MLG33	<i>P. patula</i>	Tokai, Western Cape	(Swett et al., 2014)
CMW53344	MLG39	<i>P. patula</i>	Soutpansberg, Limpopo	(Swett et al., 2014)
CMWF2631	MLG39	Grasses	Soutpansberg, Limpopo	(Swett et al., 2014)

Table 2: Disease severity scale based on root appearance three months post inoculation

Rating	Appearance	Disease level
1	Brown roots (100%)	Severe rot
2	Brown roots (75%)	Less severe rot
3	Brown roots (50%)	Moderate rot
4	Healthy (75%)	Less rot
5	Healthy (100%)	No rot

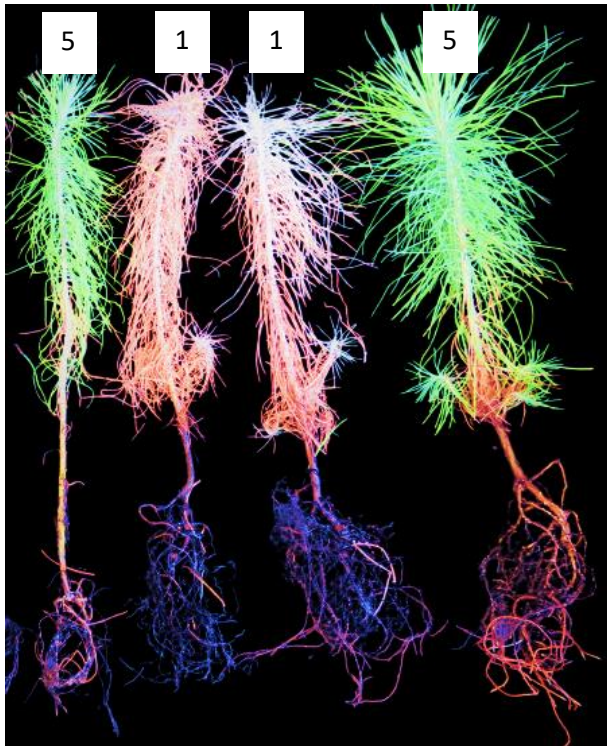
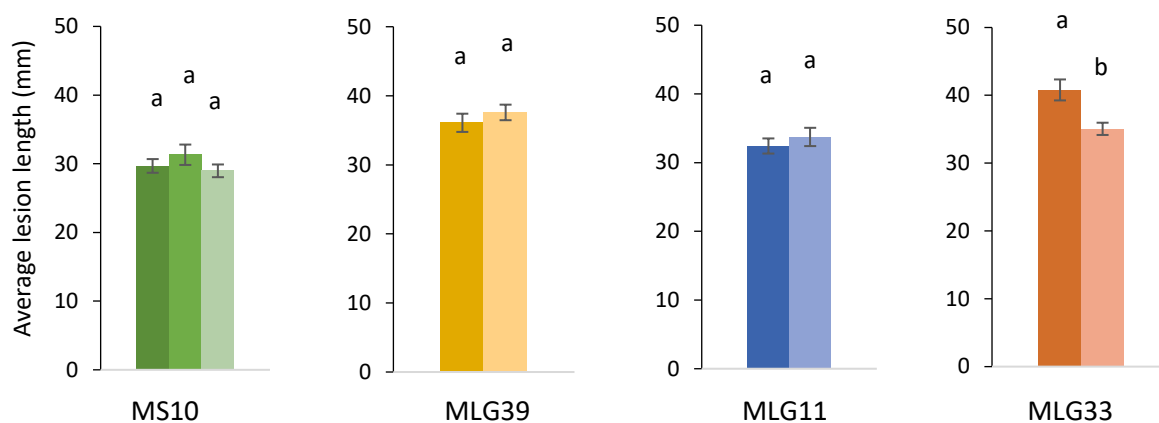


Figure 1: Pine seedlings inoculated using the H root inoculation method showing the two extreme disease levels as per (Table 2).

A Tip inoculations



B Stem inoculations

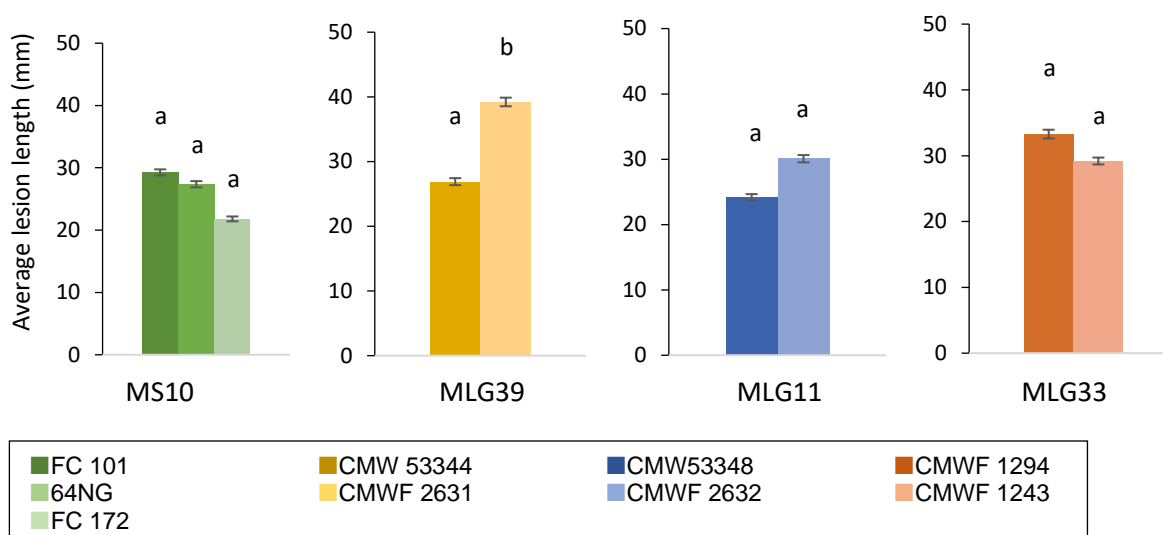


Figure 2: Results of the two sets of inoculation experiments with nominal data for four groups (MS10, MLG11, MLG33 and MLG39) of *Fusarium circinatum* isolates previously shown to represent clones based on microsatellite analysis (A) Tip inoculations, (B) Stem inoculations. Data was collected 21 days and 6 weeks post inoculation. Isolates are colour coded according to the key provided.

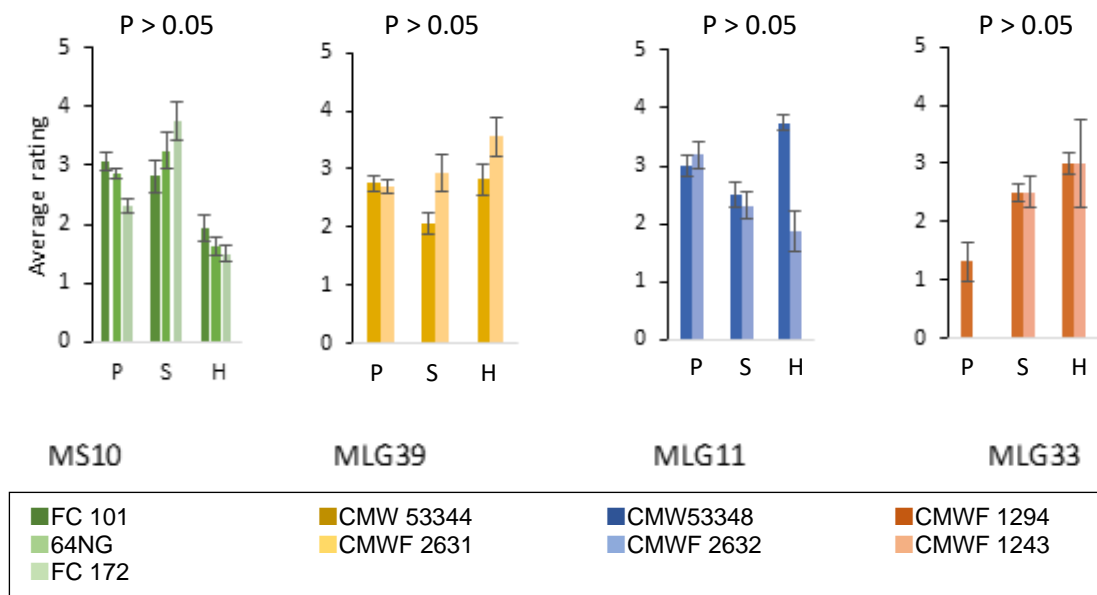


Figure 3: Results of the disease levels on roots 13 weeks post inoculation. Those performed in pine bark medium and inoculated with either mycelial plugs or spore suspensions (*ca.* 50000 spores/ml) are indicated with P and S, respectively. Those conducted in water and inoculated with spore suspensions (*ca.* 50000 spores/ml) are indicated with H. Chi-square analysis results are indicated with the p-values for each MLG group. These analyses were done within and between the isolates in each group for the three inoculation methods, all the results indicated that there was no significant difference thus only one indication is provided per MLG group.

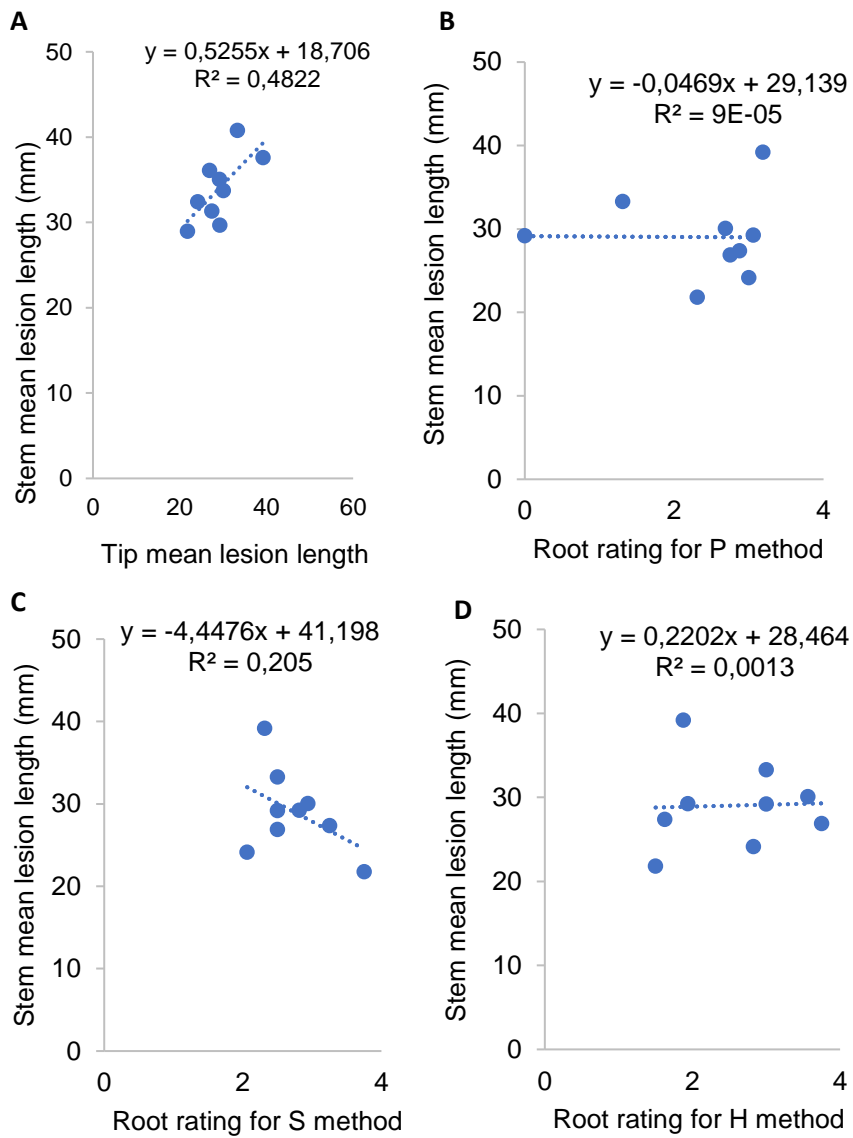


Figure 4: Regression analysis between lesion lengths recorded in the stem inoculation experiment and lesion lengths obtained for the tip inoculation experiment (A), root rating for P treatment (B), root rating for the S treatment (C), and root rating for the H treatment (D).

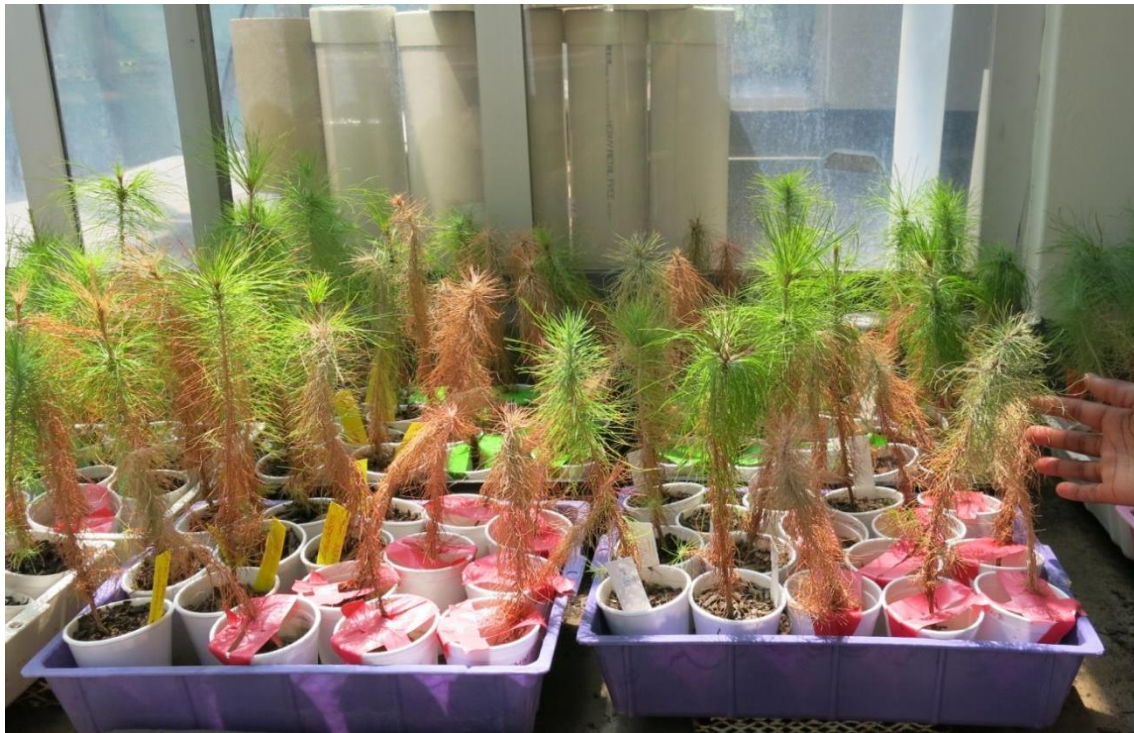
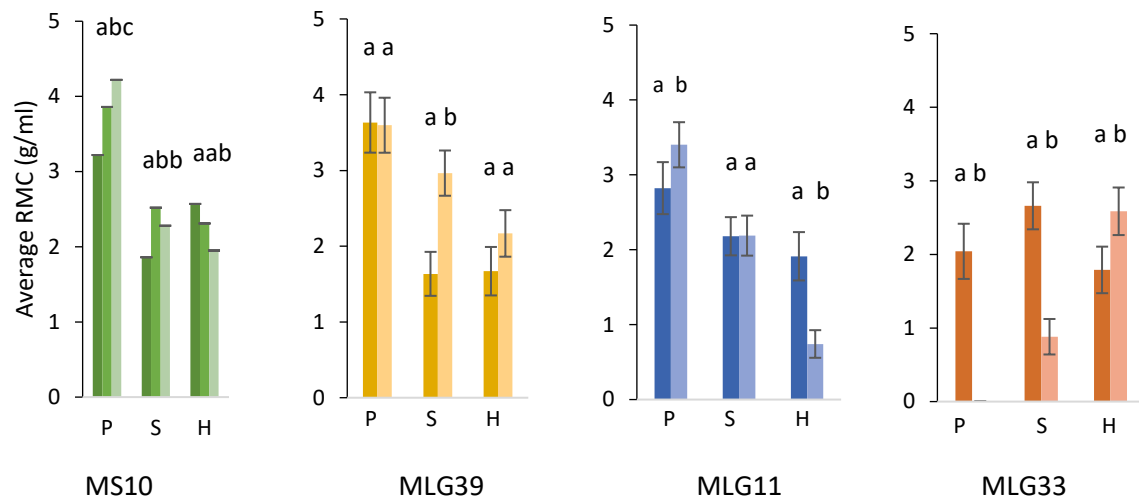


Figure 5: *Pinus patula* seedlings inoculated with four groups of *F. circinatum* clonal isolates using root inoculation methods at 13 weeks post inoculation.

A Root moisture content (RMC)



B Stem moisture content (SMC)

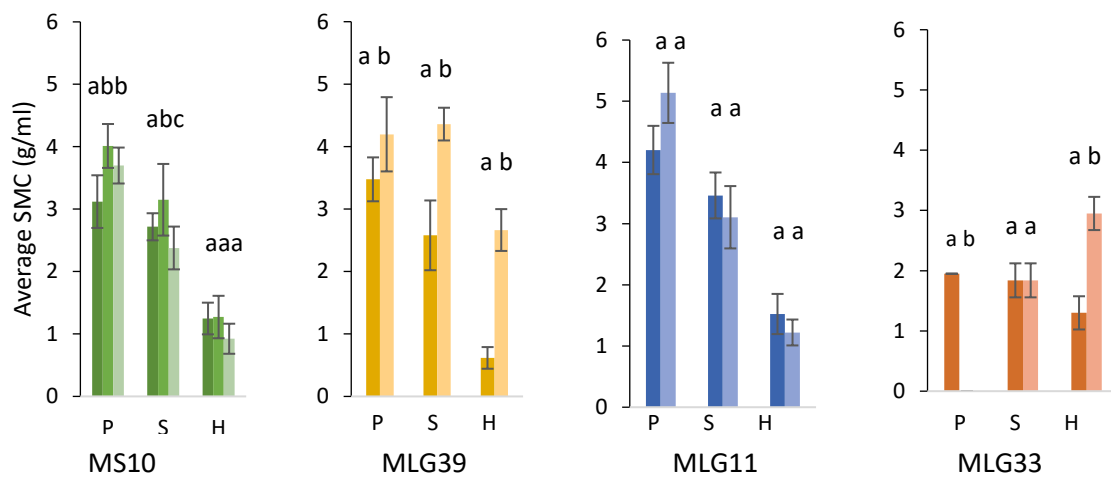


Figure 6: Results of the root inoculations RMC (A) and SMC (B) derived from root and stem weights respectively of the four groups of *F. circinatum* clonal isolates (MS10, MLG11, MLG33 and MLG39). Isolates are colour coded according to the key provided. For the root inoculation experiments, those performed in pine bark medium and inoculated with either mycelial plugs or spore suspensions (ca. 50000 spores/ml) are

indicated with P and S, respectively. Those conducted in water and inoculated with spore suspensions (*ca.* 50000 spores/ml) are indicated with H.

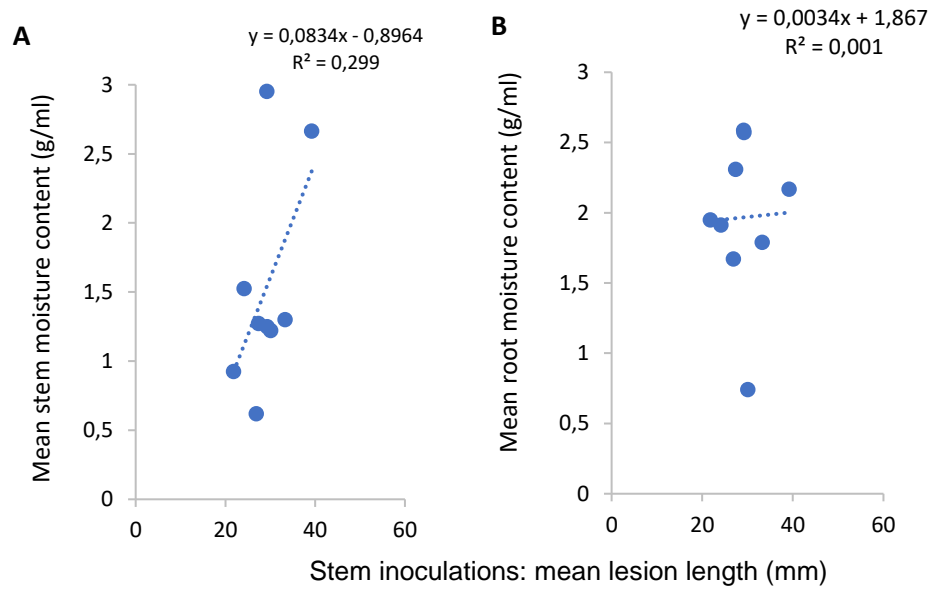
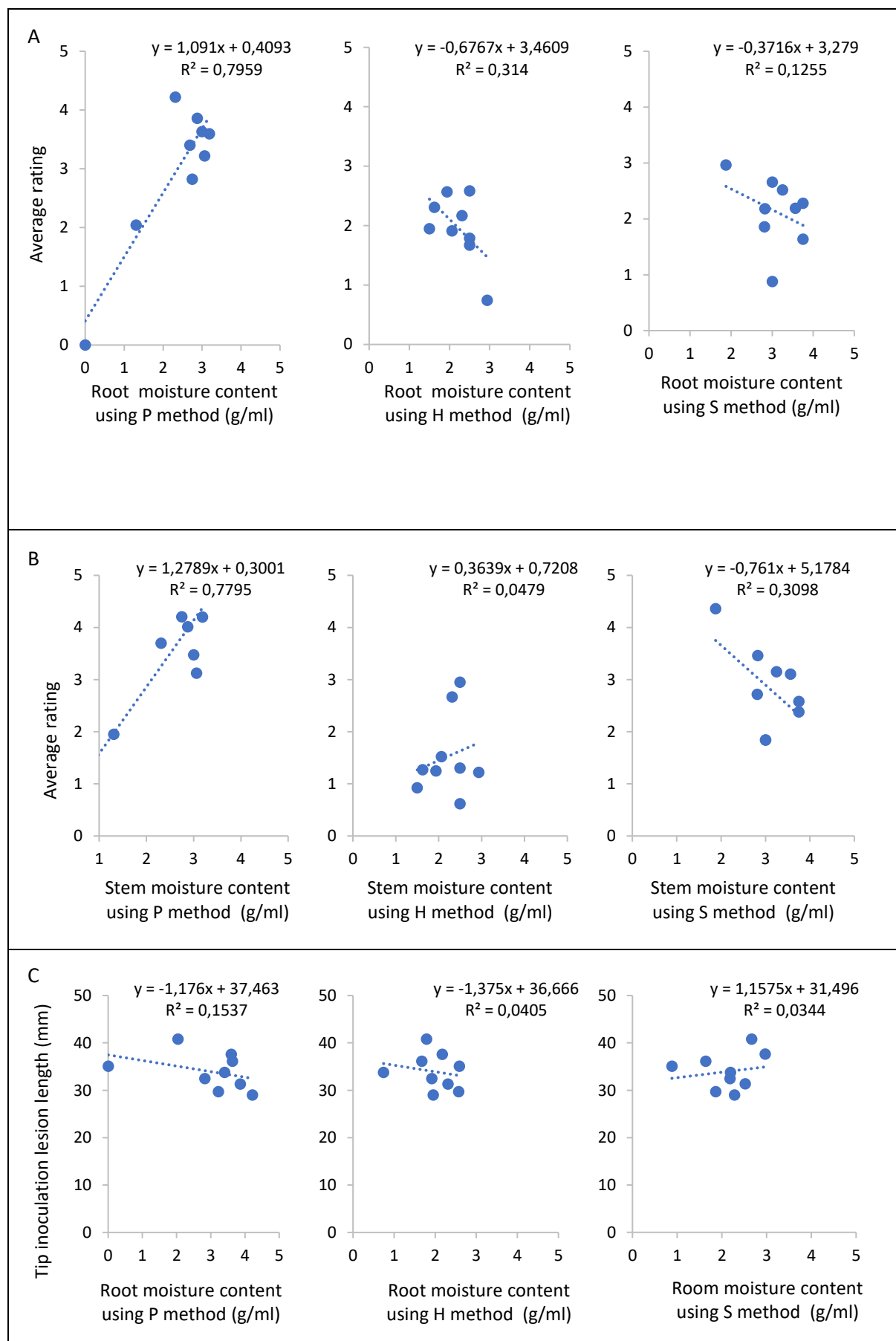


Figure 7: Regression analysis between lesion lengths recorded in the stem inoculation experiment and lesion lengths obtained for the tip inoculation experiment (A), stem moisture content for H treatment (B), and root moisture content for the H treatment (C).



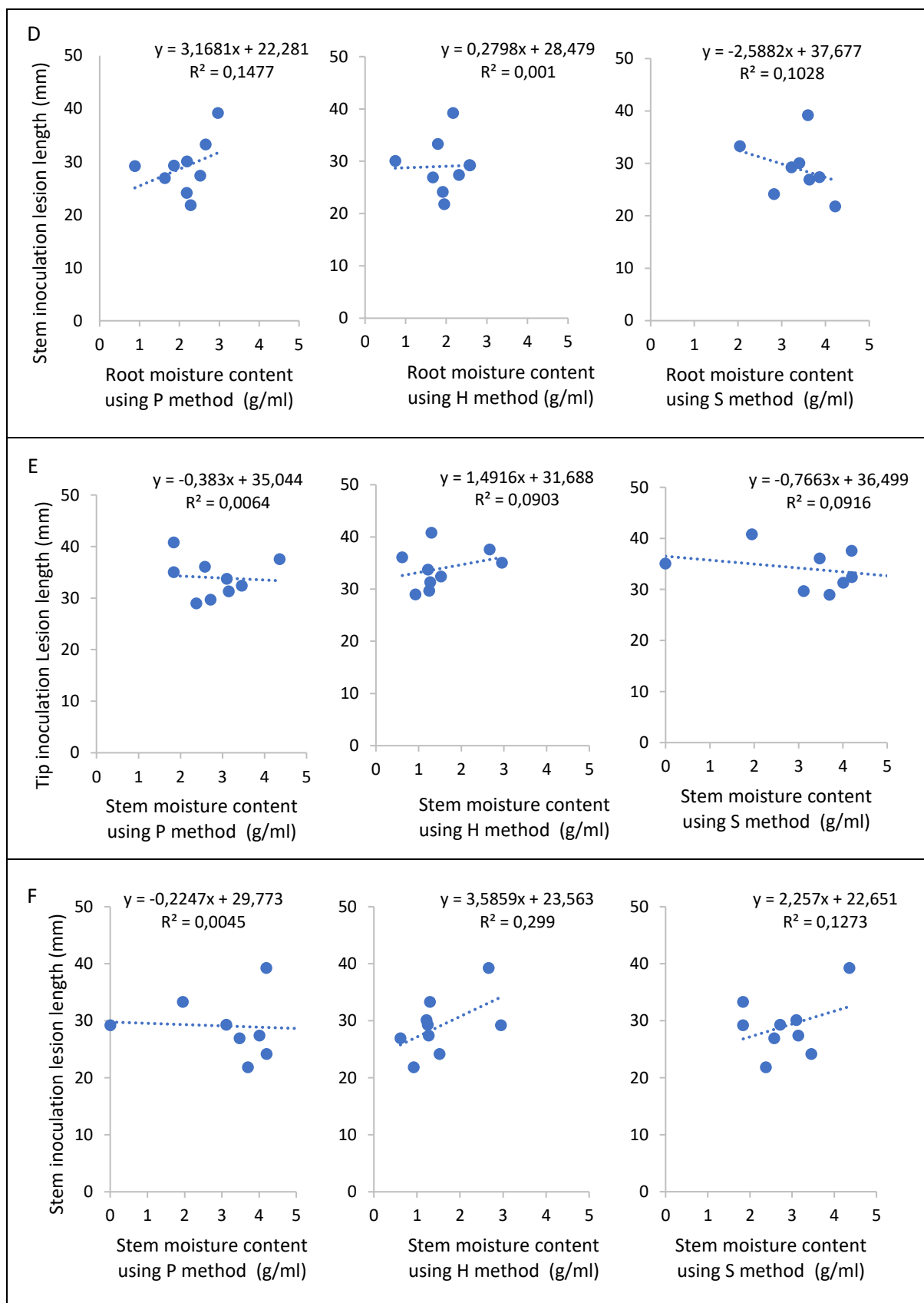


Figure 8: Regression analysis among the four groups of *F. circinatum* clonal isolates (MS10, MLG11, MLG33 and MLG39) using the three inoculation techniques. RMC

against disease rating scores in the three root inoculation methods (A), SMC against disease ratings in the three root inoculation methods (B), RMC against tip inoculations disease scores (C), RMC against stem inoculations disease scores (D), SMC against tip inoculations disease scores (E), and SMC against stem inoculations disease scores (F).

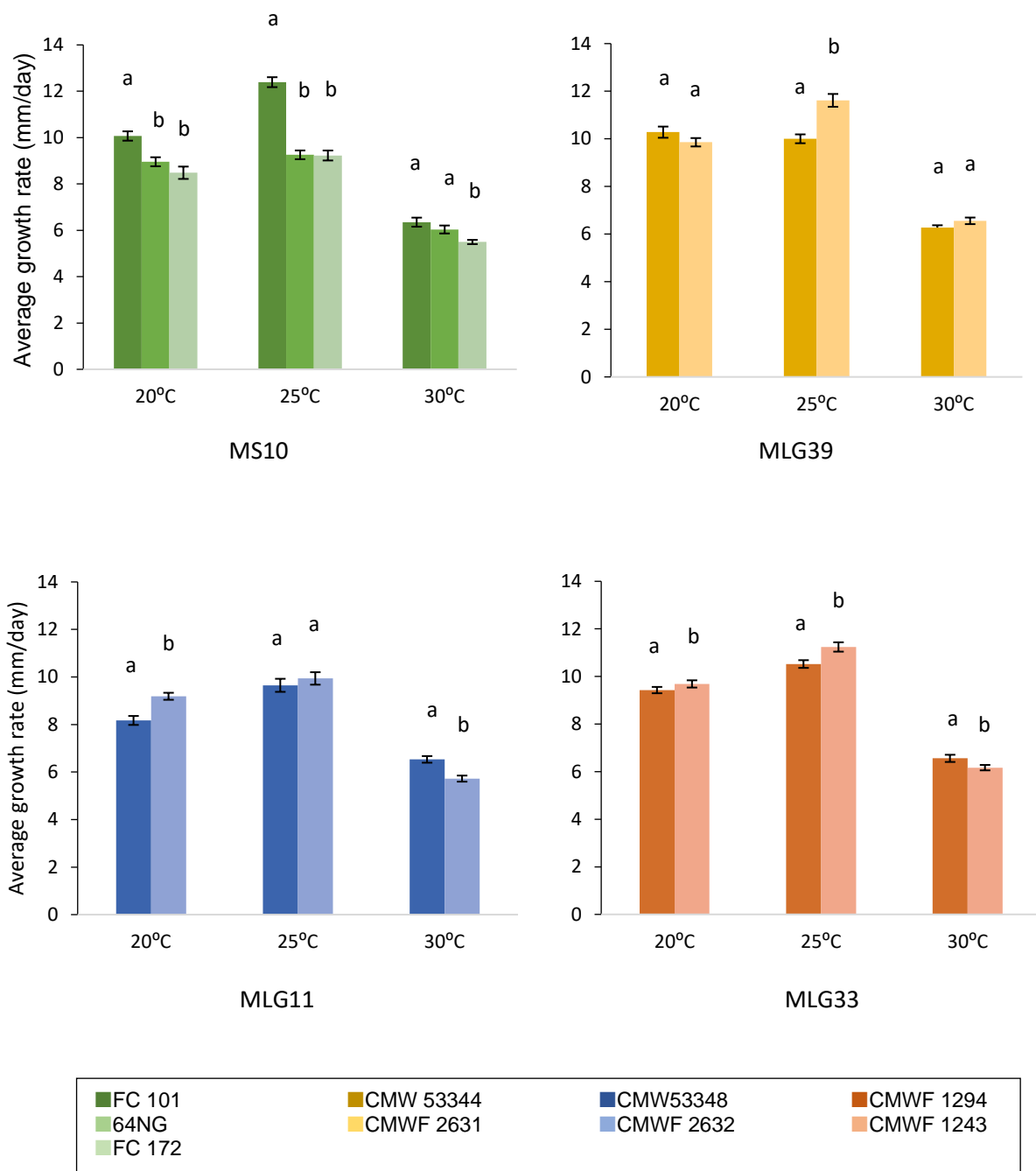
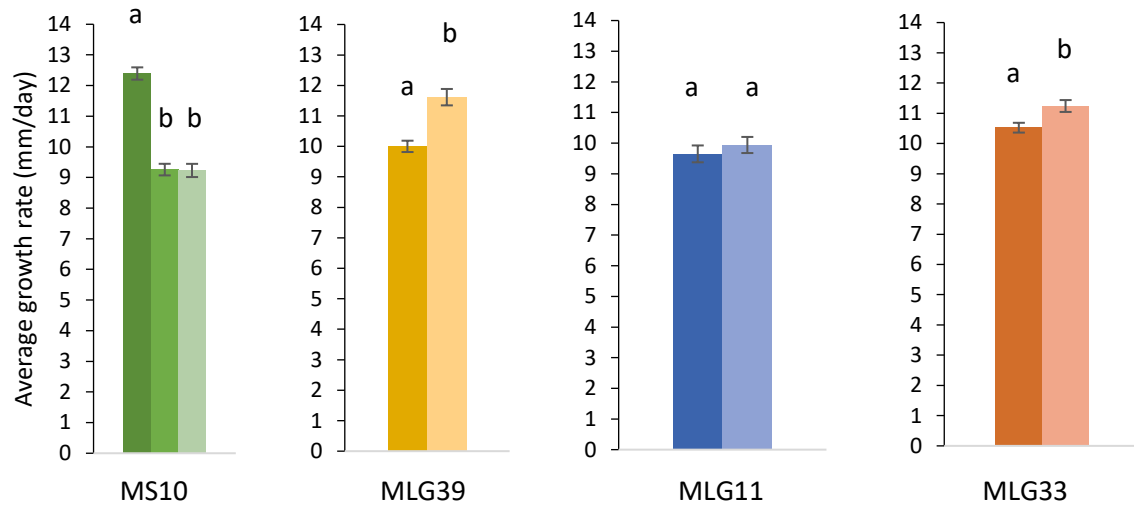


Figure 9: Growth rate comparisons among the four groups of *F. circinatum* clonal isolates (MS10, MLG11, MLG33 and MLG39) in three different temperatures on PDA. Data was collected daily. Isolates are colour coded according to the key provided.

A Growth rate on PDA



B Growth rate on PEA

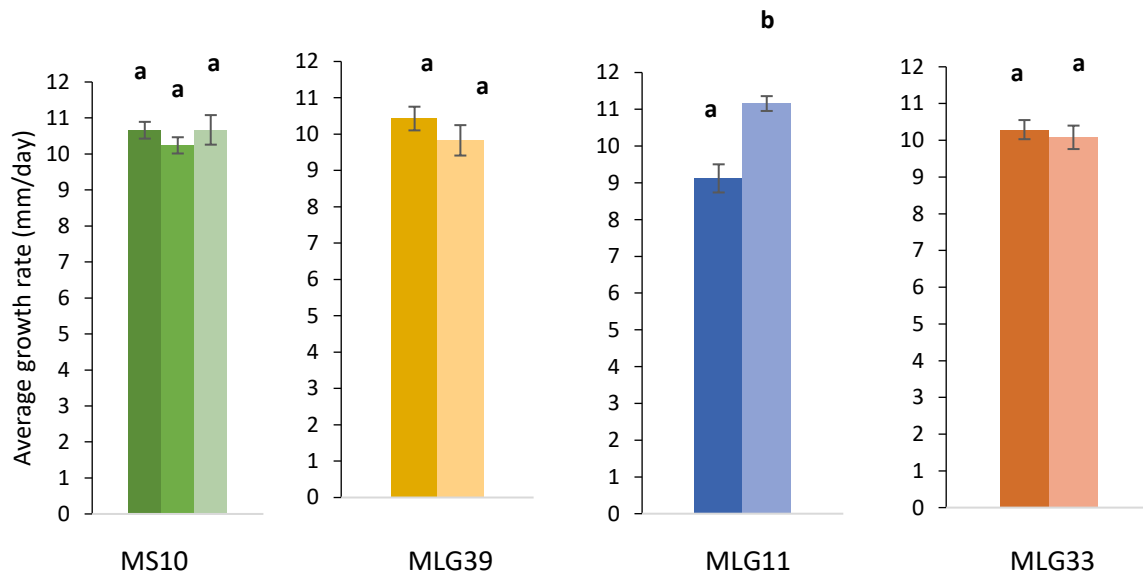


Figure 10: Growth rate results of the four groups of *F. circinatum* clonal isolates (MS10, MLG39, MLG11 and MLG33) on PDA (A1-D1) and pine extracts (A2-D2) at 25°C. Data was collected daily. Isolates are colour coded according to the key provided.

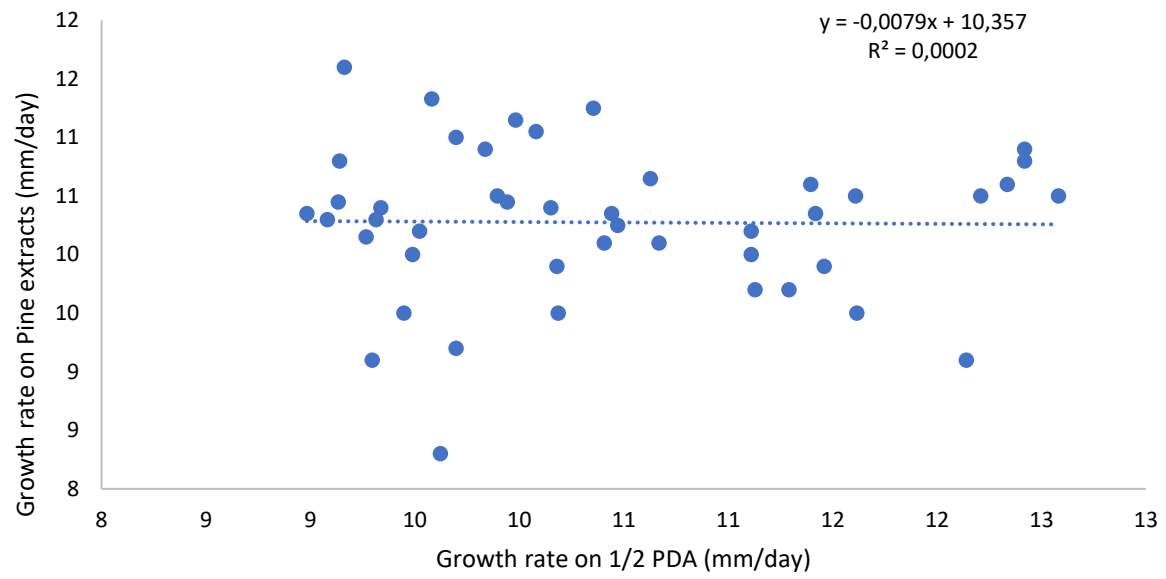
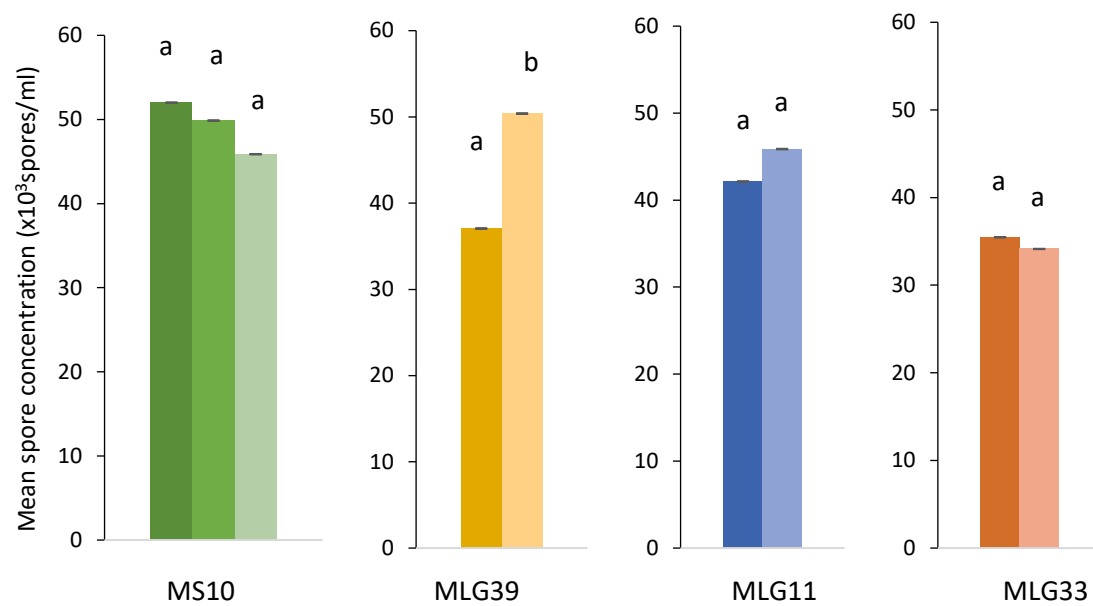


Figure 11: Four groups of *F. circinatum* clonal isolates regression analysis between the growth rates on PDA and PEA at 25°C.

A Sporulating capacity on PDA



B Sporulating capacity on PEA

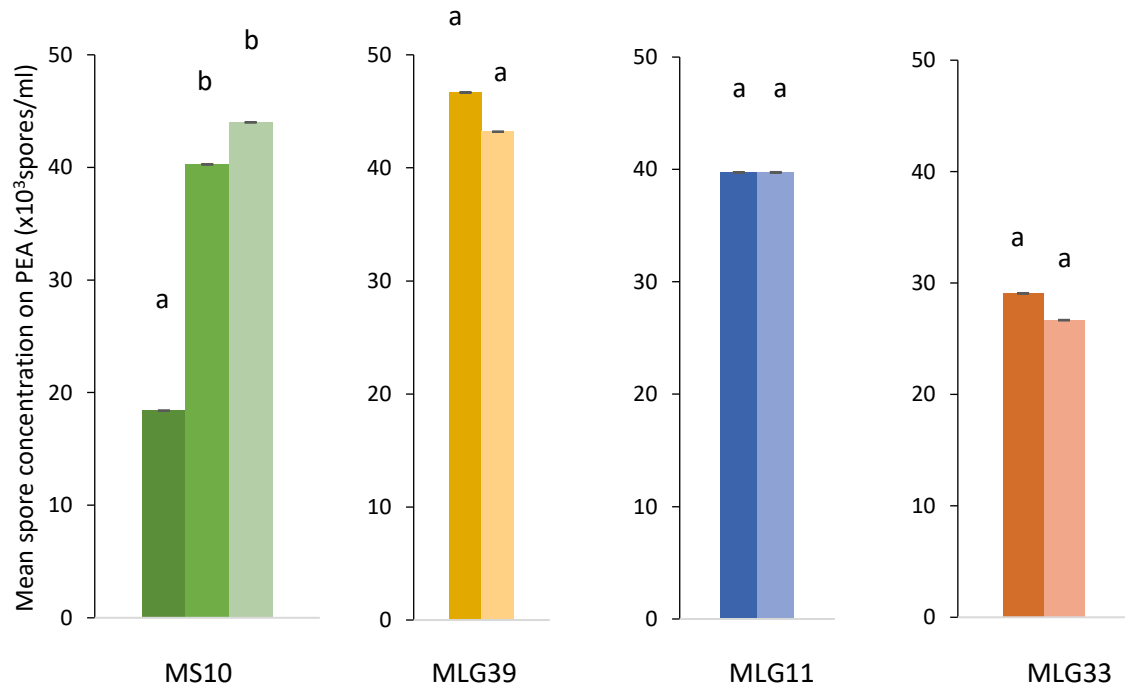


Figure 12: Sporulating capacity results for the four groups of *F. circinatum* clonal isolates (MS10, MLG11, MLG33 and MLG39) on PDA (A) and PEA (B) media at 25°C. Data was collected 7 days post plating. Isolates are colour coded according to the key provided.

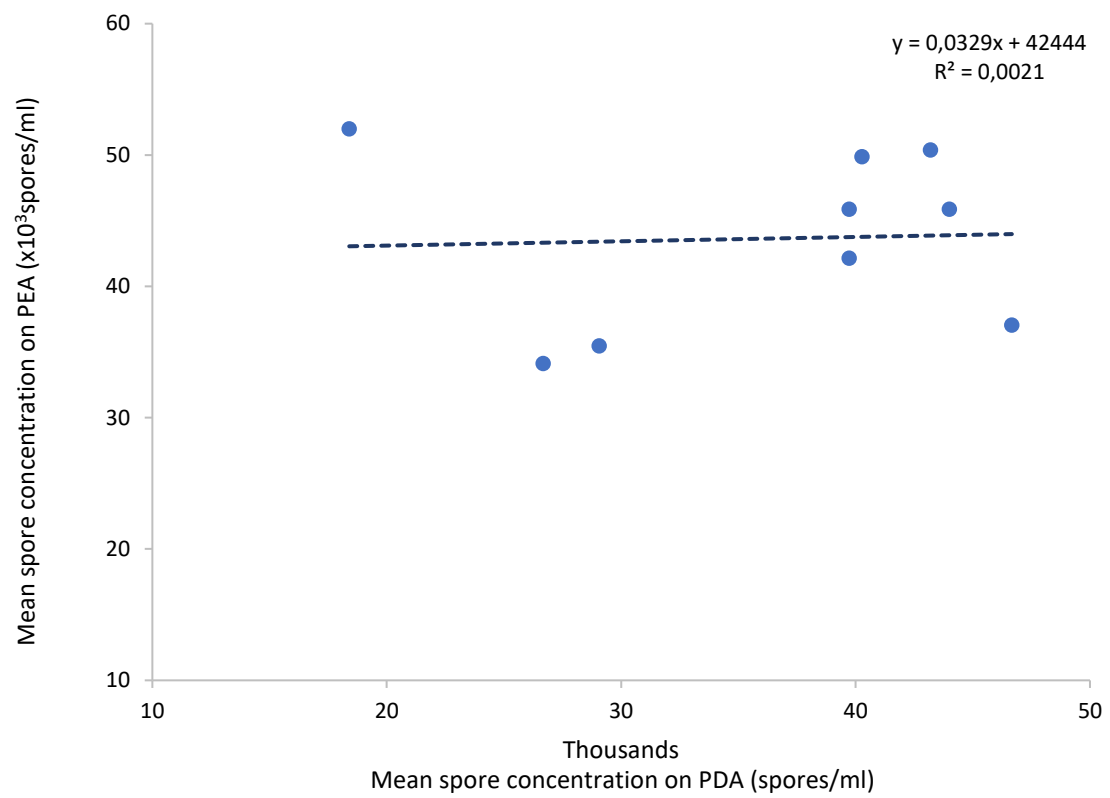


Figure 13: Four groups of *F. circinatum* clonal isolates regression between sporulating capacity analysis on 10ml ½ PDA and 10ml pine extracts.

