the dwarf palms. The vigour of pollen as assessed by pollen tube length varied between tall dwarf palms. Using this protocol coconut pollen from two accessions (WCT and COD) was also cryopreserved in liquid nitrogen for period ranging from six months to four years to study the effect of storage duration on viability and fecundity of cryopreserved pollen. It was noticed that pollen vigour increased once coconut pollen was cryopreserved. For nut set studies, cryopreserved pollen from COD palm was artificially pollinated on WCT and *vice versa.* Normal seed set was observed in these crosses on artificial pollination with cryopreserved pollen. The efficacy of pollen cryopreservation protocol as a strategy for long term conservation of coconut genetic resources is highlighted.

L 14

Leaf anatomy and molecular characterization of healthy and root (wilt) affected coconut palms

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The present study involved the investigation on anatomical and molecular variation associated with healthy and root (wilt) affected coconut palms. Leaf samples from healthy and disease infected (RWD) palms of MGD, MOD, MYD, CGD, COD and WCT, during the month of May (2011) were collected from CPCRI Kasaragod and Neriyamangalam. Anatomical studies revealed significant differences in cuticle thickness, width of parenchyma cells, distance between lower epidermis and phloem etc., (at status level) and in width of large vascular bundles, thickness of small and large vascular bundles, area of sclerenchyma cells, distance between lower epidermis and phloem etc.,(cultivar level). Molecular characterization of younger leaves of root (wilt) affected palms were done using 10 polymorphic SSR primers. Maximum similarity was seen between MOD-IW (D), MGD-IW (H) (0.9166667) and MGD-IW (H), MYD-IW (D) (0.9166667). Minimum similarity was observed in CGD-IW (D), WCT-IW (H) (0.4000000) and CGD-IW (H), WCT-IW (H) (0.4000000). COD-IW (H), MYD-IW (D) and MYD-IW (H) grouped separately with a few palms showing intergroup affinity. CGD-IW (D) and CGD-IW (H) clustered with 100% similarity.

L 15

Response of coconut seedlings to elevated carbon dioxide (ECO_2) and high temperature

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The effect of climate change variables Elevated Carbon dioxide (ECO_2) and Elevated Temperature (ET) on the growth and development of coconut seedlings was studied in an Open Top Chamber