Angiosperms (flowering plants) are the dominant terrestrial plant group today, largely due to their unrivalled photosynthetic rates, which is limited mainly by a plant’s ability to supply water to the leaf (Brodribb & Field 2010). During photosynthesis, a leaf opens to exchange carbon dioxide and oxygen with the atmosphere and loses water via transpiration. To combat the risk of dehydration, plants have evolved many innovative features to bring water closer to these sites of water loss (Sperry 2003), including the irrigation system of leaf veins (Roth-Nebelhak et al. 2001). Leaf veins are crucial as a measure of the maximum capacity for photosynthesis of 30-70 μg C m⁻² s⁻¹ for angiosperms (Sperry 2003), including the irrigation system of leaf veins (Brodribb & Field 2010). Of the two stable isotopes of carbon, ¹³C and ¹²C, the lighter ¹²C comprises significantly more biomass in the modern atmosphere (Orr et al. 2012). Carbon isotope signatures measured from modern and fossil leaves record how the leaf exchanges against the heavy ¹³C during photosynthesis, which occurs in C₄ plants mostly due to the enzyme RuBisCO (Farquhar et al. 1982). During photosynthesis, a leaf opens to exchange carbon dioxide and oxygen with the atmosphere and loses water via transpiration. To combat the risk of dehydration, plants have evolved many innovative features to bring water closer to these sites of water loss (Sperry 2003), including the irrigation system of leaf veins (Roth-Nebelhak et al. 2001). Leaf veins are crucial as a measure of the maximum capacity for photosynthesis of 30-70 μg C m⁻² s⁻¹ for angiosperms (Sperry 2003), including the irrigation system of leaf veins (Brodribb & Field 2010). Of the two stable isotopes of carbon, ¹³C and ¹²C, the lighter ¹²C comprises significantly more biomass in the modern atmosphere (Orr et al. 2012). Carbon isotope signatures measured from modern and fossil leaves record how the leaf exchanges against the heavy ¹³C during photosynthesis, which occurs in C₄ plants mostly due to the enzyme RuBisCO (Farquhar et al. 1982). During photosynthesis, a leaf opens to exchange carbon dioxide and oxygen with the atmosphere and loses water via transpiration. To combat the risk of dehydration, plants have evolved many innovative features to bring water closer to these sites of water loss (Sperry 2003), including the irrigation system of leaf veins (Roth-Nebelhak et al. 2001). Leaf veins are crucial as a measure of the maximum capacity for photosynthesis of 30-70 μg C m⁻² s⁻¹ for angiosperms (Sperry 2003), including the irrigation system of leaf veins (Brodribb & Field 2010).