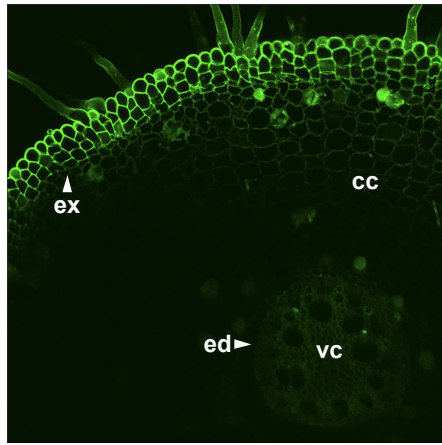
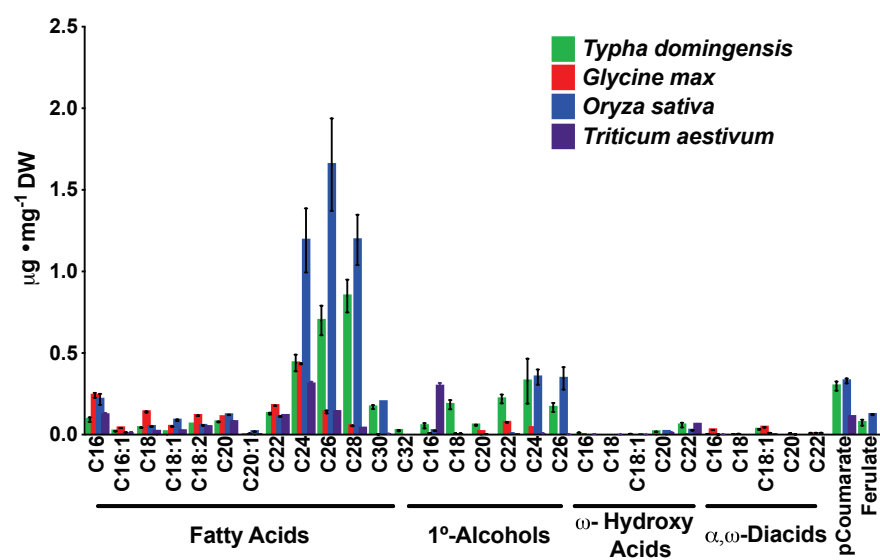
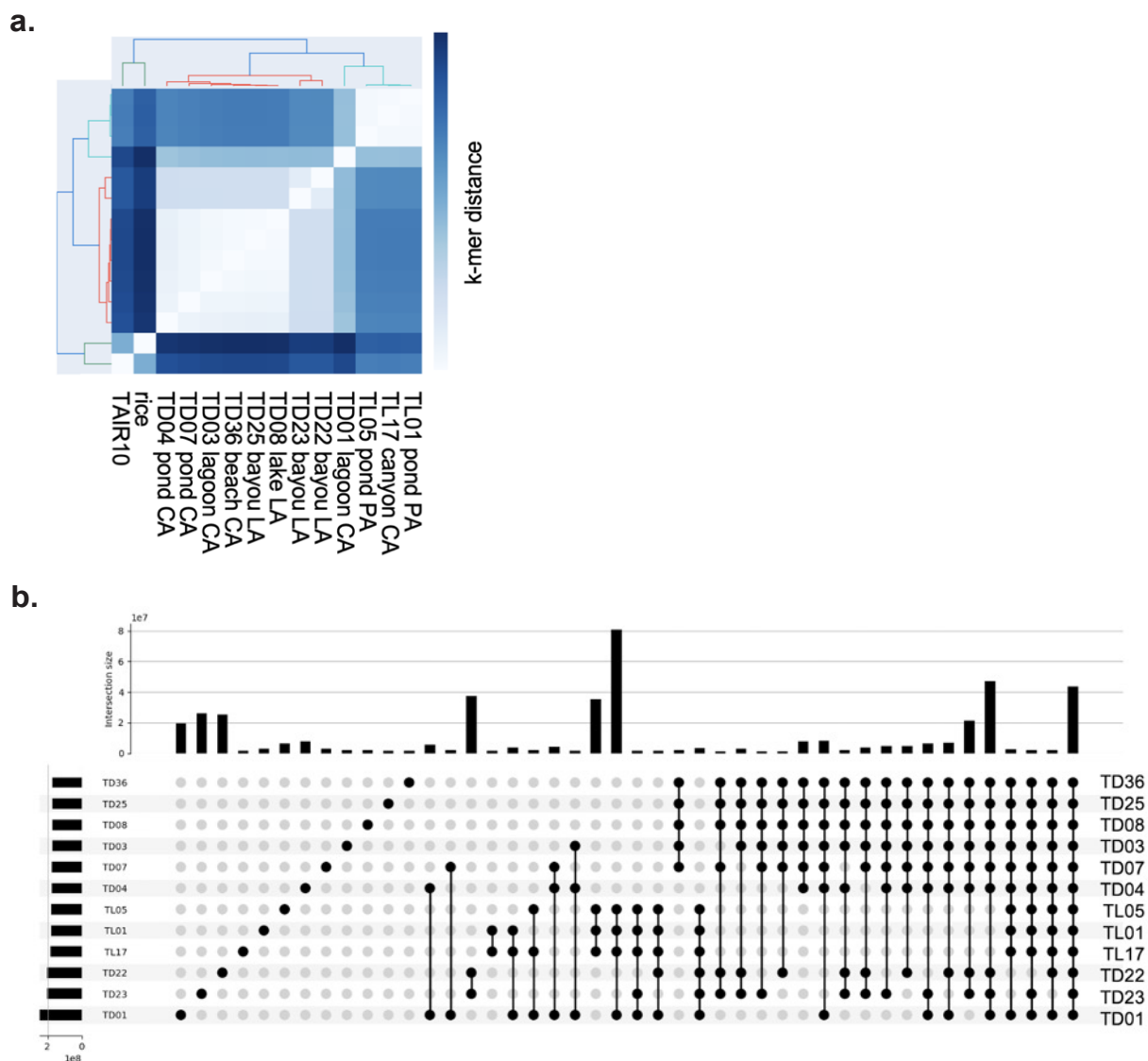




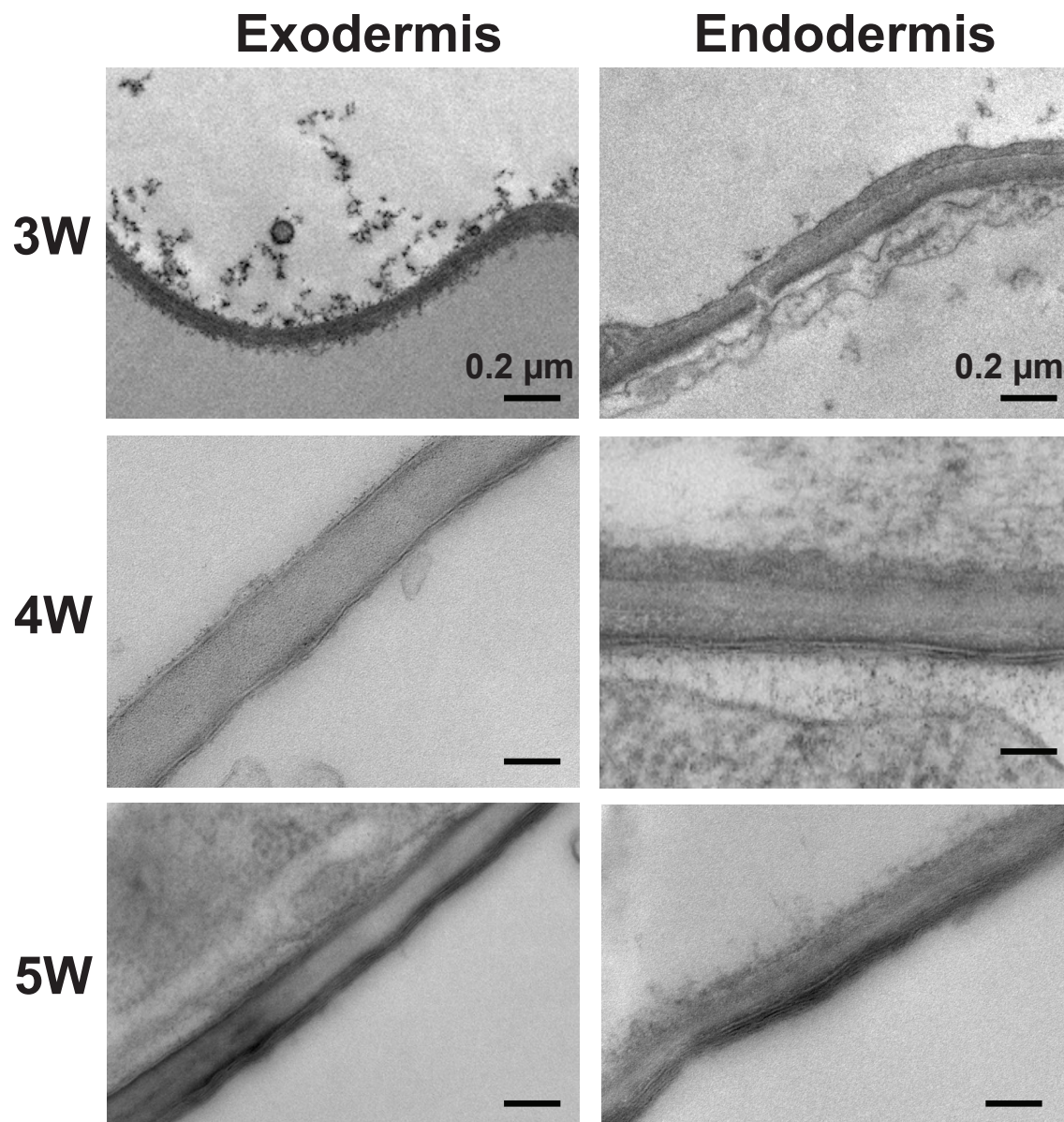
Supplemental Figure S1: Fluorol Yellow staining of root sections from adult *T. domingensis* showing multiseriate exodermis and a strong suberin signal, however the layer of cells surrounding the vasculature show very weak signal. Abbreviations: cc, chlorenchyma/cortical cells; ed, endodermis; ex, exodermis; hp, hypodermis; vc, vascular cylinder.



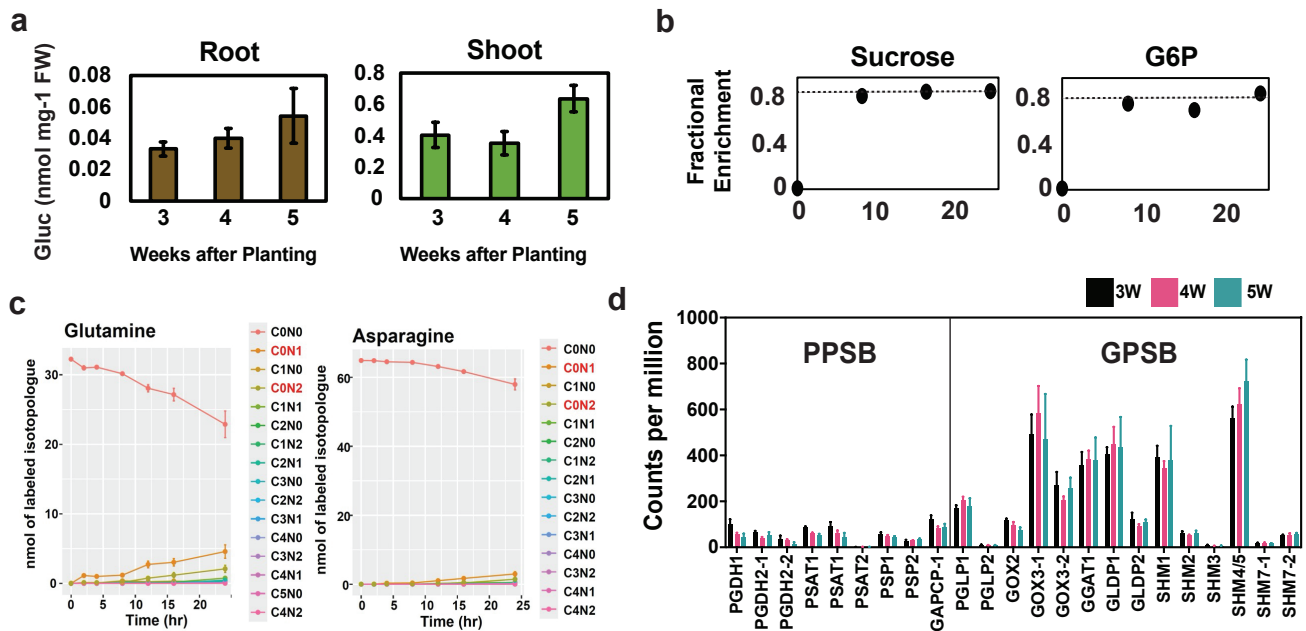
Supplemental Fig S2: GC–MS quantification of depolymerized extractable lipid monomers. Error bars represent standard error of mean, $n = 4$ technical replicates.



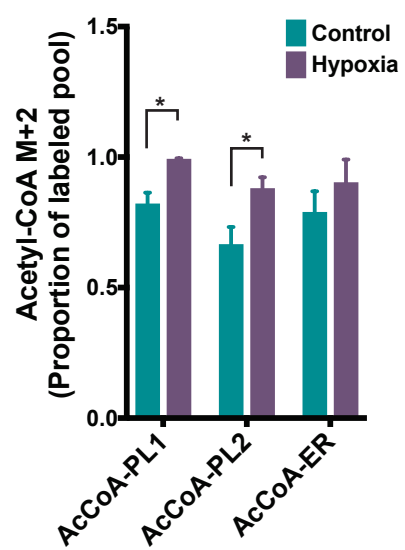
Supplemental Fig S3: a, Hierarchical clustering of pairwise k-mer distances among the twelve chromosome-scale *Typha* genomes. Genomes cluster primarily by species (*T. domingensis* and *T. latifolia*) and secondarily by geographic origin. **b**, Upset plot showing the distribution of shared and unique k-mers among the *Typha* genomes. Vertical bars indicate the number of k-mers present in each combination of genomes, while horizontal bars show the total k-mer content of each genome.



Supplemental Fig S4: TEM of 3, 4 and 5 week old *T. domingensis* root cross sections showing little to no suberin at 3W and appearance of suberized exodermis and endodermis at 4 and 5 weeks after planting.



Supplemental Fig S5: a, Starch content quantified as glucose upon hydrolysis in roots and shoots of developing *T. domingensis* from 3-5 weeks after planting. **b**, Sucrose and glucose 6-phosphate enrichment in *Arabidopsis* controls labeled with ¹³CO₂ for 24 hours. **c**, Isotopologue enrichment in glutamine and asparagine, when labeled with ¹³CO₂, K¹⁵NO₃ for 24 hours, showing nitrogen as predominant labeling source (isotopologues C0N1 and C0N2) **d**, Transcript abundance of genes associated with phosphorylated and glycolate/photorespiratory serine biosynthesis in roots across development.



Supplemental Fig S6: Proportion of M+2 labeled acetyl-CoA determined using ISA. See calculations in Supplemental table S22.