

Model of Coconut Endosperm Solidification

Layer 1 Transcriptional Streamlining

CK
(wild-type)

14,977 DEGs

Defense-dominated
157 hormone signaling
109 pathogen interaction

W6
(intermediate)

6,450 DEGs

Partial reduction
120 hormone signaling
77 pathogen interaction

W5
(domesticated)

5,342 DEGs

Streamlined program
21 starch/sucrose
16 amino sugar

Layer 2 Translational Regulation

W5 vs W6 (mid-stage)

2.3x gap
(7.1x for upregulated)

Transcriptome

2,183 DEGs (418 upregulated)

Proteome

4,956 DEPs (2,947 upregulated)

Cell wall (XTH) 5.4x | Chloroplast 3.2x | Cytochrome P450 2.8x

Layer 3 Metabolic Output

Liquid Endosperm (Coconut Water)

Sugars | Amino acids | Nucleotides | Organic acids

Solidification
8/12 classes
reverse

Solid Endosperm (Kernel)

Lipids | Cell wall | Polyphenols