

**Table S1 - Enzymes related to oil accumulation and breakdown in seeds**

Number of unisequences assigned to enzymes of metabolic pathways related to oil

accumulation and breakdown in the seeds.

| Symbol                              | Enzymes                                      | Unisequences     | JD | JG | p-value <sup>a</sup> | NJD <sup>b</sup> | NJG <sup>c</sup> |
|-------------------------------------|----------------------------------------------|------------------|----|----|----------------------|------------------|------------------|
| <b>Fatty Acid Biosynthesis</b>      |                                              |                  |    |    |                      |                  |                  |
| FatA                                | Acyl-ACP thioesterase A                      | Contig196        | 18 | 0  | 2.5e-05              | 24.59            | 0                |
|                                     |                                              | GJCCJC2057C09.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| FatB                                | Acyl-ACP thioesterase B                      | GJCCJC2044C02.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| ACC                                 | Acetyl-CoA carboxylase                       | Contig655        | 5  | 0  | 5.7e-02              | 6.83             | 0                |
|                                     |                                              | GJCCJC2010F04.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2027B01.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2058F02.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| EAR                                 | Enoyl-ACP reductase                          | Contig200        | 2  | 0  | 3.4e-01              | 2.73             | 0                |
|                                     |                                              | JGCCJG2012A05.b  | 0  | 1  | 4.0e-01              | 0                | 1.68             |
| HAD                                 | Hydroxyacyl-ACP dehydrase                    | -                | 0  | 0  | -                    | 0                | 0                |
| KAR                                 | Ketoacyl-ACP reductase                       | Contig635        | 8  | 1  | 4.8e-02              | 10.92            | 1.68             |
|                                     |                                              | GJCCJC2004E05.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2009D09.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2011G11.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2018H05.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| KAS I                               | Ketoacyl-ACP synthase I                      | Contig644        | 3  | 0  | 1.9e-01              | 4.09             | 0                |
|                                     |                                              | Contig79         | 2  | 0  | 3.4e-01              | 2.73             | 0                |
|                                     |                                              | GJCCJC2054C12.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | GJCCJC2058B04.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| KASII                               | Ketoacyl-ACP synthase II                     | Contig1291       | 3  | 1  | 5.2e-01              | 4.09             | 1.68             |
|                                     |                                              | GJCCJC2030D05.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| KASIII                              | Ketoacyl-ACP synthase                        | -                | 0  | 0  | -                    | 0                | 0                |
| MAT                                 | Malonyl-CoA ACP transacyclase                | GJCCJC2080C08.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| FAD2                                | Oleoacyl-ACP desaturase                      | Contig340        | 6  | 5  | 9.3e-01              | 8.19             | 8.43             |
|                                     |                                              | GJCCJC2013C09.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| PCH                                 | Palmitoyl-CoA hydrolase                      | JGCCJG2043B05.b1 | 0  | 1  | 4.0e-01              | 0                | 1.68             |
| SAD                                 | Stearoyl-ACP desaturase                      | GJCCJC2004A03.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| <b>Triacylglycerol Biosynthesis</b> |                                              |                  |    |    |                      |                  |                  |
| LAT                                 | 1-Acylglycerol-3-phosphate-O acyltransferase | GJCCJC2046E05.b1 | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| DGAT                                | Acyl-CoA:diacylglycerol acyltransferase      | GJCCJC2048D07.b1 | 1  | 0  | 6.1e-01              | 1.36             | 0                |
|                                     |                                              | JGCCJG2013H10.b  | 0  | 1  | 4.0e-01              | 0                | 1.68             |
| GPAT                                | Glycerol-3-phosphate acyltransferase         | GJCCJC2003H11.b  | 1  | 0  | 6.1e-01              | 1.36             | 0                |
| PDAT                                | Phospholipid:diacylglycerol acyltransferase  | JGCCJG2013H02.b  | 0  | 1  | 4.0e-01              | 0                | 1.68             |
| PP                                  | Phosphatidate phosphatase                    | -                | 0  | 0  | -                    | 0                | 0                |

|                             |                                               |                        |   |    |         |       |       |
|-----------------------------|-----------------------------------------------|------------------------|---|----|---------|-------|-------|
| OLE                         | Oleosin                                       | Contig13               | 2 | 0  | 3.4e-01 | 2.73  | 0     |
|                             |                                               | GJCCJC2072E05.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
| Triacylglycerol Degradation |                                               |                        |   |    |         |       |       |
| ML                          | Monoacylglycerol lipase                       | GJCCJC2013E10.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
| PLAS                        | Peroxisomal long-chain acyl-CoA synthetase    | Contig1208             | 0 | 11 | 1.3e-04 | 0     | 18.55 |
|                             |                                               | GJCCJC2010F01.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | GJCCJC2040B11.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | JGCCJG2007H01.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2016E07.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
| PFAT                        | Peroxisomal fatty acid / acyl-CoA transporter | -                      | 0 | 0  | -       | 0     | 0     |
| TL                          | Triacylglycerol lipase                        | Contig1070             | 0 | 6  | 7.2e-03 | 0     | 10.12 |
|                             |                                               | Contig1303             | 0 | 12 | 5.8e-05 | 0     | 20.24 |
|                             |                                               | Contig1544             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
|                             |                                               | Contig84               | 9 | 0  | 5.3e-03 | 12.29 | 0     |
|                             |                                               | Contig867              | 2 | 0  | 3.4e-01 | 2.73  | 0     |
|                             |                                               | GJCCJC2009F09.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | GJCCJC2018F09.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | GJCCJC2069F03.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | GJCCJC2078B02.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | GJCCJC2080E06.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | JGCCJG2011G08.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2016F07.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2018F11.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2061A03.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | Fatty Acid Degradation |   |    |         |       |       |
| FADA                        | Acetyl-CoA acyltransferase                    | Contig1038             | 5 | 42 | 1.9e-10 | 6.83  | 70.84 |
|                             |                                               | Contig1525             | 0 | 18 | 4.6e-07 | 0     | 30.36 |
|                             |                                               | GJCCJC2004B10.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | JGCCJG2022G04.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2025H04.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2042D03.b1       | 0 | 1  | 4.0e-01 | 0     | 1.68  |
| ATOB                        | Acetyl-CoA C-acetyltransferase                | GJCCJC2008B09.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | JGCCJG2052C07.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
| ADH                         | Alcohol dehydrogenase                         | Contig1560             | 2 | 1  | 7.9e-01 | 2.73  | 1.68  |
| ACAD                        | Acyl-CoA dehydrogenase                        | Contig1184             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
|                             |                                               | Contig1401             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
| ACOX                        | Acyl-CoA oxidase                              | Contig1167             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
|                             |                                               | Contig1600             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
|                             |                                               | Contig562              | 3 | 1  | 5.2e-01 | 4.09  | 1.68  |
|                             |                                               | JGCCJG2002B12.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
| ALDH                        | Aldehyde dehydrogenase (NAD+)                 | Contig1080             | 0 | 4  | 3.6e-02 | 0     | 6.75  |
|                             |                                               | Contig1337             | 0 | 2  | 1.8e-01 | 0     | 3.37  |
|                             |                                               | Contig6                | 6 | 2  | 3.0e-01 | 8.19  | 3.37  |
|                             |                                               | JGCCJG2039G05.b1       | 0 | 1  | 4.0e-01 | 0     | 1.68  |
| DCR                         | Dienoyl-CoA reductase                         | Contig1191             | 0 | 9  | 6.4e-04 | 0     | 15.18 |
|                             |                                               | GJCCJC2021C11.b        | 1 | 0  | 6.1e-01 | 1.36  | 0     |
|                             |                                               | JGCCJG2063E05.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |
|                             |                                               | JGCCJG2010C10.b        | 0 | 1  | 4.0e-01 | 0     | 1.68  |

|      |                                |                 |   |    |         |      |       |
|------|--------------------------------|-----------------|---|----|---------|------|-------|
|      |                                | GJCCJC2005H04.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
| PAAG | Enoyl-CoA hydratase            | Contig1260      | 0 | 4  | 3.6e-02 | 0    | 6.75  |
|      |                                | Contig1523      | 0 | 3  | 8.0e-02 | 0    | 5.06  |
|      |                                | Contig482       | 3 | 14 | 1.9e-03 | 4.09 | 23.61 |
|      |                                | Contig1145      | 0 | 2  | 1.8e-01 | 0    | 3.37  |
|      |                                | Contig1410      | 0 | 2  | 1.8e-01 | 0    | 3.37  |
|      |                                | GJCCJC2042A10.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | GJCCJC2016E01.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | JGCCJG2028A05.b | 0 | 1  | 4.0e-01 | 0    | 1.68  |
|      |                                | GJCCJC2013D11.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | JGCCJG2034A11.b | 0 | 1  | 4.0e-01 | 0    | 1.68  |
|      |                                | GJCCJC2080F12.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | JGCCJG2063H12.b | 0 | 1  | 4.0e-01 | 0    | 1.68  |
| ACSL | Long-chain acyl-CoA synthetase | GJCCJC2010F01.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | GJCCJC2050G11.b | 1 | 0  | 6.1e-01 | 1.36 | 0     |
|      |                                | JGCCJG2007H01.b | 0 | 1  | 4.0e-01 | 0    | 1.68  |
|      |                                | JGCCJG2016E07.b | 0 | 1  | 4.0e-01 | 0    | 1.68  |

<sup>a</sup> The p-value refers to the Audic-Claverie statistics for differential expression

<sup>b</sup> JD normalised to 10,000 reads

<sup>c</sup> JG normalised to 10,000 reads