

**Table S2.** Gene ontology enrichment and clustering of identified proteins in both Yucatan green dwarf (YGD) and Mexican pacific tall (MPT) (Core) or exclusively in YGD or MPT. For this analysis we used *Arabidopsis* protein homologs.

## Core

# WARNING - This exported Revigo data is only useful for the specific purpose of constructing a TreeMap visualization.

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| TermID     | Name  | Frequency | Value  | Uniqueness | Dispensability | Representative     |
|------------|---|-----------|--------|------------|----------------|--------------------|
| GO:0000226 | microtubule cytoskeleton organization                       | 0.340003  | 1.3678 | 0.988612   | 0.01040522     | null               |
| GO:0000278 | mitotic cell cycle  | 0.386399  | 1.3678 | 0.988494   | 0.01052856     | null               |
| GO:0005975 | carbohydrate metabolic process                              | 5.826191  | 2.1907 | 0.933809   | 0.09069475     | null               |
| GO:0006096 | glycolytic process  | 0.532551  | 22.149 | 0.648503   | 0              | null               |
| GO:0006108 | malate metabolic process                                    | 0.054243  | 2.3475 | 0.884456   | 0.35081898     | glycolytic process |
| GO:0010499 | proteasomal ubiquitin-independent protein catabolic process | 0.008394  | 6.7258 | 0.843223   | 0.37012795     | glycolytic process |
| GO:0030388 | fructose 1,6-bisphosphate metabolic process                 | 0.012265  | 1.209  | 0.90986    | 0.36108737     | glycolytic process |
| GO:0006457 | protein folding   | 1.03808   | 12.777 | 0.987502   | 0.01158996     | null               |
| GO:0006734 | NADH metabolic process                                      | 0.056712  | 1.4374 | 0.972475   | 0.0311262      | null               |
| GO:0007017 | microtubule-based process                                   | 0.798415  | 1.9585 | 0.987781   | 0.01208936     | null               |

|         |  |        |     |       |        |             |
|---------|--|--------|-----|-------|--------|-------------|
| GO:0015 |  | 0.0503 | 1.2 | 0.962 | 0.0445 |             |
| 977     | carbon fixation                                | 02     | 859 | 67    | 3891   | null        |
| GO:0015 |  | 0.2175 | 1.4 | 0.948 | 0.0609 |             |
| 979     | photosynthesis                                 | 87     | 538 | 841   | 9619   | null        |
| GO:0045 |  | 0.1778 | 2.7 | 0.982 | 0.0098 |             |
| 454     | cell redox homeostasis                         | 77     | 017 | 087   | 2244   | null        |
| GO:0032 |  | 0.0006 | 1.8 | 0.992 | 0.1356 | cell redox  |
| 889     | regulation of vacuole fusion, non-autophagic   | 23     | 008 | 874   | 3283   | homeostasis |
| GO:0046 |  | 0.0088 | 41. | 0.804 |        |             |
| 686     | response to cadmium ion                        | 23     | 215 | 765   | 0      | null        |
| GO:0009 |  | 0.1714 | 5.7 | 0.767 | 0.2115 | response to |
| 408     | response to heat                               | 54     | 167 | 998   | 2305   | cadmium ion |
| GO:0009 |  | 0.1706 | 1.7 | 0.859 | 0.2606 | response to |
| 615     | response to virus                              | 13     | 198 | 91    | 9386   | cadmium ion |
| GO:0046 |  | 0.0184 | 1.0 | 0.815 | 0.3573 | response to |
| 685     | response to arsenic-containing substance       | 7      | 885 | 745   | 0895   | cadmium ion |
| GO:0051 |  | 0.0167 | 8.2 | 0.961 | 0.0081 |             |
| 085     | chaperone cofactor-dependent protein refolding | 25     | 175 | 239   | 5552   | null        |

## Only Yucatan green dwarf (YGD)

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| TermID     | Name                            | Frequency | Value | Uniqueness | Dispensability | Representative |
|------------|---------------------------------|-----------|-------|------------|----------------|----------------|
| GO:0001558 | regulation of cell growth       | 0.072     | 1.28  | -          | 0              | null           |
| GO:0006457 | protein folding                 | 1.038     | 7.60  | 1          | 0.988          | 23374          |
| GO:0006633 | fatty acid biosynthetic process | 0.750     | 3.28  | 0.033      | 5              | 0              |

|                |  |             |             |            |                |                                       |
|----------------|--|-------------|-------------|------------|----------------|---------------------------------------|
| GO:000<br>9298 | GDP-mannose biosynthetic process   | 0.037<br>38 | 1.75<br>374 | 0.851<br>8 | 0.2499<br>6828 | fatty acid<br>biosynthetic<br>process |
| GO:000<br>6890 | retrograde vesicle-mediated transport, Golgi<br>to endoplasmic reticulum | 0.069<br>58 | 1.00<br>604 | -<br>1     | 0              | null                                  |
| GO:000<br>7017 | microtubule-based process  | 0.798<br>42 | 1.06<br>986 | 0.988<br>5 | 0.0120<br>8936 | null                                  |
| GO:000<br>9793 | embryo development ending in seed<br>dormancy                            | 0.021<br>3  | 2.00<br>587 | -<br>1     | 0              | null                                  |
| GO:004<br>2026 | protein refolding  | 0.092<br>36 | 3.93<br>554 | 0.931<br>1 | 0.0098<br>3271 | null                                  |
| GO:004<br>6686 | response to cadmium ion  | 0.008<br>82 | 17.5<br>331 | 0.788<br>6 | 0              | null                                  |
| GO:000<br>9408 | response to heat   | 0.171<br>45 | 7.92<br>082 | 0.777<br>7 | 0.2115<br>2305 | response to<br>cadmium ion            |
| GO:000<br>9615 | response to virus  | 0.170<br>61 | 2.20<br>337 | 0.855<br>1 | 0.2606<br>9386 | response to<br>cadmium ion            |

## Only Mexican pacific tall (MPT)

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# To export a reduced-redundancy set of GO terms, go to the Scatterplot or Table tab, and export from there.

| TermID         | Name   | Frequency   | Value      | Uniqueness    | Dispensability | Representative                    |
|----------------|--|-------------|------------|---------------|----------------|-----------------------------------|
| GO:0005<br>975 | carbohydrate metabolic process               | 5.8261<br>9 | 1.8<br>279 | 0.928<br>6656 | 0.090<br>37153 | null                              |
| GO:1901<br>135 | carbohydrate derivative metabolic<br>process | 6.8137<br>2 | 1.0<br>690 | 0.938<br>3445 | 0.103<br>21    | carbohydrate metabolic<br>process |

|                |  |             |                     |               |                |                 |                   |
|----------------|--|-------------|---------------------|---------------|----------------|-----------------|-------------------|
|                |  |             |                     |               | -              |                 |                   |
| GO:0006<br>099 | tricarboxylic acid cycle                   | 0.5173<br>8 | 762<br>5<br>-<br>13 | 4.4<br>0.987  | 0.863<br>8390  | 0               | null              |
| GO:0006<br>457 | protein folding                            | 1.0380<br>8 | 2.4<br>677          | 7121<br>61    | 0.012<br>32809 |                 | null              |
|                |  |             |                     | 3.0<br>-      | 0.987          |                 |                   |
| GO:0007<br>010 | cytoskeleton organization                  | 0.9577<br>8 | 710<br>9<br>-<br>7  | 7934<br>46205 | 0.011<br>null  |                 |                   |
|                |  |             |                     | 1.8<br>-      | 0.946          |                 |                   |
| GO:0009<br>793 | embryo development ending in seed dormancy | 0.0213      | 105<br>6            | 0531<br>88    | 0              |                 | null              |
|                |  |             |                     | 1.0<br>-      |                |                 |                   |
| GO:0015<br>031 | protein transport                          | 2.7257<br>1 | 707<br>7            | 1             | 0              |                 | null              |
|                |  |             |                     | 1.2<br>-      | 0.943          |                 |                   |
| GO:0015<br>979 | photosynthesis                             | 0.2175<br>9 | 812<br>7            | 4241<br>56    | 0.060<br>84153 |                 | null              |
|                |  |             |                     | 1.4<br>-      | 0.833          |                 |                   |
| GO:0033<br>356 | UDP-L-arabinose metabolic process          | 0.0033<br>3 | 341<br>4            | 8947<br>42    | 0.047<br>03988 |                 | null              |
|                |  |             |                     | 1.3<br>-      | 0.816          |                 |                   |
| GO:0006<br>097 | glyoxylate cycle                           | 0.0538<br>4 | 685<br>3            | 4135<br>07    | 0.268<br>65503 | UDP-L-arabinose | metabolic process |
|                |  |             |                     | 1.3<br>-      | 0.822          |                 |                   |
| GO:0006<br>101 | citrate metabolic process                  | 0.0108<br>5 | 685<br>3            | 7418<br>41    | 0.164<br>39007 | UDP-L-arabinose | metabolic process |
|                |  |             |                     | 1.2<br>-      | 0.784          |                 |                   |
| GO:0006<br>536 | glutamate metabolic process                | 0.2023<br>5 | 176<br>4            | 5563<br>98    | 0.325<br>9023  | UDP-L-arabinose | metabolic process |
|                |  |             |                     | 1.2<br>-      | 0.874          |                 |                   |
| GO:0015<br>995 | chlorophyll biosynthetic process           | 0.0477<br>8 | 306<br>1            | 9338<br>66    | 0.132<br>8704  | UDP-L-arabinose | metabolic process |
|                |  |             |                     | 1.2<br>-      | 0.839          |                 |                   |
| GO:0035<br>999 | tetrahydrofolate interconversion           | 0.1589<br>1 | 1.0<br>482          | 9656<br>81    | 0.205<br>20025 | UDP-L-arabinose | metabolic process |
|                |  |             |                     | 1.6<br>-      | 0.848          |                 |                   |
| GO:0042<br>744 | hydrogen peroxide catabolic process        | 0.1227<br>2 | 420<br>2            | 2478<br>04    | 0.057<br>92981 |                 | null              |
|                |  |             |                     | 0.806<br>-    |                |                 |                   |
| GO:0046<br>686 | response to cadmium ion                    | 0.0088<br>2 | 23.                 | 8122<br>61    | 0              |                 | null              |

|         |                                     |        |     |       |       |                        |  |
|---------|-------------------------------------|--------|-----|-------|-------|------------------------|--|
|         |                                     |        | 064 |       |       |                        |  |
|         |                                     |        | 5   |       |       |                        |  |
|         |                                     |        | -   |       |       |                        |  |
|         |                                     |        | 2.0 | 0.812 |       |                        |  |
| GO:0009 |                                     | 0.0302 | 682 | 3304  | 0.190 | response to cadmium    |  |
| 651     | response to salt stress             | 7      | 3   | 35    | 48836 | ion                    |  |
|         |                                     |        | -   |       |       |                        |  |
|         |                                     |        | 1.5 | 0.986 |       |                        |  |
| GO:0080 | negative regulation of response to  | 0.0001 | 119 | 8542  |       |                        |  |
| 148     | water deprivation                   | 8      | 8   | 61    | 0     | null                   |  |
|         |                                     |        | -   |       |       |                        |  |
|         |                                     |        | 1.4 | 0.969 |       | negative regulation of |  |
| GO:0045 |                                     | 0.1778 | 597 | 2513  | 0.116 | response to water      |  |
| 454     | cell redox homeostasis              | 8      | 2   | 92    | 69074 | deprivation            |  |
|         |                                     |        | -   |       |       |                        |  |
|         |                                     |        | 1.7 | 0.978 |       | negative regulation of |  |
| GO:0051 |                                     | 10.176 | 311 | 3476  | 0.288 | response to water      |  |
| 252     | regulation of RNA metabolic process | 5      | 5   | 48    | 32307 | deprivation            |  |