

**S7 Table. GEBVs of BW parents and their SDLs in the top 10% of the population under drought stress.**

| BW Parents                 | SYN Parents                              | Cross | Ave. Yield GEBVs | % increase/decrease GEBVs |
|----------------------------|--|-------|------------------|---------------------------|
| <b>CACUKE</b>              |  |       | <b>0.13</b>      |                           |
| CACUKE                     | SYNP43                                   | BC    | 0.27             | 104                       |
| <b>CNO79</b>               |  |       | <b>0.12</b>      |                           |
| CNO79                      | SYNP44                                   | TC    | 0.32             | 177                       |
| <b>KIRITATI</b>            |  |       | <b>0.23</b>      |                           |
| KIRITATI                   | SYNP5                                    | BC    | 0.31             | 36                        |
| <b>KIRITATI/2*TRCH</b>     |  |       | <b>0.28</b>      |                           |
| KIRITATI/2*TRCH            | SYNP1                                    | BC    | 0.32             | 12                        |
| <b>KRL19</b>               |  |       | <b>0.21</b>      |                           |
| KRL19                      | SYNP18                                   | BC    | 0.33             | 53                        |
| <b>MILAN/AMSEL</b>         |  |       | <b>-0.11</b>     |                           |
| MILAN/AMSEL                | SYNP7/4/GONDO//<br>SHA5/WEAVER/3/PASTOR  | TC    | 0.34             | 411                       |
| <b>MILAN/S87230//BAV92</b> |  |       | <b>0.44</b>      |                           |
| MILAN/S87230//BAV92        | SYNP4                                    | BC    | 0.35             | -20                       |
| MILAN/S87230//BAV92        | SYNP4                                    | BP    | 0.32             | -27                       |
| MILAN/S87230//BAV92        | SYNP17                                   | BP    | 0.41             | -5                        |
| MILAN/S87230//BAV92        | SYNP21                                   | BC    | 0.34             | -23                       |
| MILAN/S87230//BAV92        | SYNP21                                   | BP    | 0.29             | -33                       |
| MILAN/S87230//BAV92        | SYNP23                                   | BC    | 0.34             | -21                       |
| MILAN/S87230//BAV92        | SYNP27                                   | BC    | 0.38             | -12                       |
| MILAN/S87230//BAV92        | SYNP27                                   | BP    | 0.34             | -22                       |
| MILAN/S87230//BAV92        | SYNP39                                   | BP    | 0.44             | 0                         |
| MILAN/S87230//BAV92        | SYNP39                                   | BC    | 0.34             | -21                       |
| MILAN/S87230//BAV92        | SYNP39                                   | BP    | 0.39             | -10                       |
| <b>MINO</b>                |  |       | <b>0.26</b>      |                           |
| MINO                       | SYNP36/4/GONDO//<br>SHA5/WEAVER/3/PASTOR | TC    | 0.32             | 22                        |
| <b>PANDORA</b>             |  |       | <b>0.08</b>      |                           |
| PANDORA                    | SYNP1                                    | BC    | 0.30             | 282                       |
| PANDORA                    | SYNP3                                    | BC    | 0.27             | 252                       |
| PANDORA                    | SYNP14                                   | BP    | 0.41             | 422                       |
| PANDORA                    | SYNP18                                   | BP    | 0.28             | 260                       |
| PANDORA                    | SYNP19                                   | BC    | 0.27             | 252                       |
| PANDORA                    | SYNP31                                   | BC    | 0.26             | 239                       |
| PANDORA                    | SYNP39                                   | BP    | 0.28             | 259                       |
| <b>PBW502</b>              |  |       | <b>0.15</b>      |                           |
| PBW502                     | SYNP5                                    | BC    | 0.34             | 134                       |
| PBW502                     | SYNP25                                   | BC    | 0.27             | 82                        |
| PBW502                     | SYNP43                                   | BC    | 0.31             | 110                       |
| <b>SUNCO/2*PASTOR</b>      |  |       | <b>0.12</b>      |                           |
| SUNCO/2*PASTOR             | SYNP5                                    | BC    | 0.35             | 196                       |
| SUNCO/2*PASTOR             | SYNP27                                   | BC    | 0.37             | 218                       |
| SUNCO/2*PASTOR             | SYNP43                                   | BC    | 0.33             | 182                       |
| <b>SW89.5181/KAUZ</b>      |  |       | <b>-0.13</b>     |                           |
| SW89.5181/KAUZ             | SYNP35                                   | BC    | 0.34             | 363                       |