**Table 1.** The relationship between the SRA accession number, treatments and data in NCBI.

| SRA number | Treatments# | Data name |
|---|---|---|
| **SRR11659571** | W7-1 | R1908096_BKDL190834194-1a_1.fq.gz, R1908096_BKDL190834194-1a_2.fq.gz |
| SRR11659570 | W7-2 | R1908097_BKDL190834195-1a_1.fq.gz, R1908097_BKDL190834195-1a_2.fq.gz |
| SRR11659569 | W7-3 | R1908098_BKDL190834196-1a_1.fq.gz, R1908098_BKDL190834196-1a_2.fq.gz |
| SRR11659564 | PW7-1 | R1908102_BKDL190834200-1a_1.fq.gz, R1908102_BKDL190834200-1a_2.fq.gz |
| SRR11659563 | PW7-2 | R1908103_BKDL190834201-1a_1.fq.gz, R1908103_BKDL190834201-1a_2.fq.gz |
| SRR11659562 | PW7-3 | R1908104_BKDL190834202-1a_1.fq.gz, R1908104_BKDL190834202-1a_2.fq.gz |
| SRR11659568 | D7-1 | R1908099_BKDL190834197-1a_1.fq.gz, R1908099_BKDL190834197-1a_2.fq.gz |
| SRR11659567 | D7-2 | R1908100_BKDL190834198-1a_1.fq.gz, R1908100_BKDL190834198-1a_2.fq.gz |
| SRR11659565 | D7-3 | R1908101_BKDL190834199-1a_1.fq.gz, R1908101_BKDL190834199-1a_2.fq.gz |
| SRR11659561 | PD7-1 | R1908105_BKDL190834203-1a_1.fq.gz, R1908105_BKDL190834203-1a_2.fq.gz |
| SRR11659560 | PD7-2 | R1908106_BKDL190834204-1a_1.fq.gz, R1908106_BKDL190834204-1a_2.fq.gz |
| SRR11659559 | PD7-3 | R1908107_BKDL190834205-1a_1.fq.gz, R1908107_BKDL190834205-1a_2.fq.gz |
| SRR11659558 | W14-1 | R1908108_BKDL190834206-1a_1.fq.gz, R1908108_BKDL190834206-1a_2.fq.gz |
| SRR11659557 | W14-2 | R1908109_BKDL190834207-1a_1.fq.gz, R1908109_BKDL190834207-1a_2.fq.gz |
| SRR11659556 | W14-3 | R1908110_BKDL190834208-1a_1.fq.gz, R1908110_BKDL190834208-1a_2.fq.gz |
| SRR11659551 | PW14-1 | R1908114_BKDL190834212-1a_1.fq.gz, R1908114_BKDL190834212-1a_2.fq.gz |
| SRR11659550 | PW14-2 | R1908115_BKDL190834213-1a_1.fq.gz, R1908115_BKDL190834213-1a_2.fq.gz |
| SRR11659549 | PW14-3 | R1908116_BKDL190834214-1a_1.fq.gz, R1908116_BKDL190834214-1a_2.fq.gz |
| SRR11659554 | D14-1 | R1908111_BKDL190834209-1a_1.fq.gz, R1908111_BKDL190834209-1a_2.fq.gz |
| SRR11659553 | D14-2 | R1908112_BKDL190834210-1a_1.fq.gz, R1908112_BKDL190834210-1a_2.fq.gz |
| SRR11659552 | D14-3 | R1908113_BKDL190834211-1a_1.fq.gz, R1908113_BKDL190834211-1a_2.fq.gz |
| SRR11659548 | PD14-1 | R1908117_BKDL190834215-1a_1.fq.gz, R1908117_BKDL190834215-1a_2.fq.gz |
| SRR11659547 | PD14-2 | R1908118_BKDL190834216-1a_1.fq.gz, R1908118_BKDL190834216-1a_2.fq.gz |
| SRR11659546 | PD14-3 | R1908119_BKDL190834217-1a_1.fq.gz, R1908119_BKDL190834217-1a_2.fq.gz |

# Note: -1, -2, -3 for replicates.

**Table 2.** Effects of seed priming with brassinolide on plant height of peanut under well-watered and drought conditions.

| **BR concentrations (ppm)** | | **Well-watered** | **Drought** | **Ratio of Drought/Well-watered** | **Ratio of priming/no priming under well-watered** | **Ratio of priming/no priming under drought** |
|---|---|---|---|---|---|---|
| 7 days | 0.00 | 18.35±0.14b | 12.93±0.96b* | 70.46±5.82b | -- | -- |
| | 0.05 | 15.81±1.56b | 12.72±1.19b | 80.42±0.39ab | 86.16±7.85b | 99.00±16.67a |
| | 0.10 | 22.08±2.00a | 17.64±0.39a | 80.30±9.10ab | 120.29±10.02a | 146.40±6.46a |
| | 0.15 | 19.13±1.11ab | 18.45±1.27a | 96.83±12.35a | 104.23±5.29ab | 125.71±24.99a |
| | 0.20 | 16.67±0.47b | 14.93±0.11b* | 89.61±3.19ab | 90.84±1.84b | 99.43±30.97a |
| 14 days | 0.00 | 19.25±0.12b | 16.55±1.47ab | 85.92±7.11a | -- | -- |
| | 0.05 | 16.92±1.83b | 13.58±1.03b | 80.42±2.60a | 87.90±10.10b | 82.69±13.63a |
| | 0.10 | 25.60±1.00a | 14.61±1.40b* | 57.24±7.74b | 132.97±4.34a | 89.07±16.46a |
| | 0.15 | 25.99±1.78a | 19.32±1.26a* | 74.32±0.23a | 135.05±10.15a | 117.55±18.15a |
| | 0.20 | 20.00±3.76b | 15.19±1.15b | 76.75±8.66a | 103.99±20.27ab | 92.49±15.27a |

Note: Data represent mean ± standard error; Letters after data represent statistical significance at $p < 0.05$ with Least Significant Difference (LSD) test. * represent statistically significant difference ($p < 0.05$) between well-watered and drought conditions.

***Table 3.*** Effects of BR priming on biomass of peanut plants under well-watered and drought conditions.

| **BR concentrations(ppm)** | | **DWR (g)** | | **DWS (g)** | | **DWL (g)** | |
|---|---|---|---|---|---|---|---|
| | | **Well-watered** | **Drought** | **Well-watered** | **Drought** | **Well-watered** | **Drought** |
| 7 days | 0.00 | 0.25±0.01b | 0.22±0.02b | 1.20±0.08ab | 0.86±0.09b | 2.11±0.03ab | 1.75±0.07c |
| | 0.05 | 0.28±0.01b | 0.24±0.01ab | 1.10±0.14ab | 0.89±0.19b | 2.23±0.27ab | 1.95±0.04b |
| | 0.10 | 0.34±0.01a | 0.26±0.01a | 1.23±0.07a | 1.10±0.04a | 2.55±0.01a | 2.30±0.06a |
| | 0.15 | 0.35±0.01a | 0.28±0.01a | 1.36±0.10a | 1.20±0.07a | 2.22±0.25ab | 2.25±0.19a |
| | 0.20 | 0.25±0.02b | 0.23±0.02b | 1.01±0.05b | 0.83±0.19b | 1.76±0.10b | 1.63±0.18c |
| 14 days | 0.00 | 0.48±0.02a | 0.34±0.02b | 2.81±0.14bc | 1.64±0.07b | 4.13±0.37b | 2.69±0.10b |
| | 0.05 | 0.42±0.01ab | 0.29±0.01b | 2.86±0.26bc | 1.76±0.09b | 4.47±0.21b | 2.53±0.29b |
| | 0.10 | 0.44±0.05ab | 0.38±0.01ab | 3.04±0.08a | 1.81±0.11b | 5.33±0.04a* | 3.07±0.18a |
| | 0.15 | 0.51±0.02a | 0.41±0.03a | 3.06±0.18a* | 2.05±0.11a | 5.34±0.06a* | 3.14±0.29a |
| | 0.20 | 0.32±0.01b | 0.27±0.01b | 2.64±0.21c | 1.42±0.04b | 3.86±0.36b | 2.05±0.09c |

Note: Data represent mean ± standard error; Letters after value represent statistical significance at $p < 0.05$ with Least significant Difference (LSD) test. * represent statistically significant difference ($p < 0.05$) between well-watered and drought conditions. DWR, DWS and DWL represent dry weight of roots, stems, and leaves.

***Table 4.*** Effects of BR priming on peanut yield components under well-watered and drought conditions.

| **BR concentrations (ppm)** | | **Number of pods per plant** | **Hundred pod weight (g)** | **Hundred kernel weight (g)** | **Shelling rate (%)** |
|---|---|---|---|---|---|
| 0.00 ppm | Well-watered | 9.6±1.67a | 75.8±1.07a | 30.8±0.43a | 71.6±1.01a |
| | 7d drought | 10.0±0.00a | 67.5±0.95b | 27.9±0.30b | 71.9±1.02a |
| | 14d drought | 7.6±1.14b | 59.2±0.88c | 24.6±0.34c | 71.6±0.91a |
| 0.15 ppm | Well-watered | 14.5±1.64a** | 85.8b±1.21b** | 39.2b±0.55b** | 77.0±1.09a** |
| | 7d drought | 15.3±2.08a** | 97.4a±1.38a** | 43.0a±0.61a** | 74.5±0.85b* |
| | 14d drought | 9.6±1.52b* | 63.25±0.89c* | 27.6±0.39c* | 74.1±1.05b* |

Note: Data are presented as the mean ± standard error (n =3). Letters after the value represent the statistically significant difference between each BR concentration ($p < 0.05$) as determined by the LSD test. * and ** represent the statistically significant difference at $p < 0.05$ and $p < 0.01$, respectively, between 0.15 ppm BR priming and 0 ppm BR priming. 7d, 7 days; 14d, 14 days.

***Table 5.*** Effects of BR priming on kernel quality of peanut under well-watered and drought conditions.

| **BR treatments** | | **Oil content (%)** | **Protein content (%)** |
|---|---|---|---|
| 0.00 ppm | Well-watered | 50.79±0.13ab | 28.13±0.12b |
| | 7d drought | 51.01±0.50a | 29.37±0.21a |
| | 14d drought | 49.53±0.47b | 27.90±0.19b |
| 0.15 ppm | Well-watered | 52.96±0.20a | 28.95±0.70c |
| | 7d drought | 51.60±0.41b | 30.95±0.84a |
| | 14d drought | 50.30±0.11c | 29.97±0.68b |

Note: Data are expressed as the mean ± S.E. (n = 3). Different letters within each growth stage are significantly different ($P < 0.05$) as determined by the LSD test. * represents the comparison between 0.15 ppm with 0 ppm.

***Table 6.*** Differentially expressed genes in plant hormone signaling pathways.

| DEG id in peanut genome | Name in pathway* | Associated hormone |
|---|---|---|
| arahy.Tifrunner.gnm1.ann1.WH4ILY | PP2C06 | ABA |
| arahy.Tifrunner.gnm1.ann1.WG90F5 | PP2C51 | ABA |
| arahy.Tifrunner.gnm1.ann1.52QCLV | PP2CA | ABA |
| arahy.Tifrunner.gnm1.ann1.CD5B6Y | PP2CA | ABA |
| arahy.Tifrunner.gnm1.ann1.VQ5KVR | PYL4 | ABA |
| arahy.Tifrunner.gnm1.ann1.BWHT07 | SRK2F | ABA |
| arahy.Tifrunner.gnm1.ann1.944YYF | AUX28 | auxin |
| arahy.Tifrunner.gnm1.ann1.UBHF2S | AUX28 | auxin |
| arahy.Tifrunner.gnm1.ann1.2G66YZ | GH3.1 | auxin |
| arahy.Tifrunner.gnm1.ann1.IM1JRZ | GH3.10 | auxin |
| arahy.Tifrunner.gnm1.ann1.4F6GHG | GH3.11 | auxin |
| arahy.Tifrunner.gnm1.ann1.0UWS9P | GH3.6 | auxin |
| arahy.Tifrunner.gnm1.ann1.7FN9BJ | GH3.6 | auxin |
| arahy.Tifrunner.gnm1.ann1.CB6084 | IAA14 | auxin |
| arahy.Tifrunner.gnm1.ann1.QUY0YV | IAA14 | auxin |
| arahy.Tifrunner.gnm1.ann1.D33YE9 | AUX1 | auxin |
| arahy.Tifrunner.gnm1.ann1.UGVD7A | AUX1 | auxin |
| arahy.Tifrunner.gnm1.ann1.45C8U1 | AUX3 | auxin |
| arahy.Tifrunner.gnm1.ann1.LRNE2N | AUX3 | auxin |
| arahy.Tifrunner.gnm1.ann1.R5YX1M | AUX4 | auxin |
| arahy.Tifrunner.gnm1.ann1.32LLN4 | SAUR50 | auxin |
| arahy.Tifrunner.gnm1.ann1.VDQ89P | XTH23 | auxin |
| arahy.Tifrunner.gnm1.ann1.6IE7Q2 | BAK1 | BR |
| arahy.Tifrunner.gnm1.ann1.DH99G0 | BAK1 | BR |
| arahy.Tifrunner.gnm1.ann1.2LG1YU | BKI1 | BR |
| arahy.Tifrunner.gnm1.ann1.R40G9H | AHP4 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.D687JL | ARR9 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.223T1K | AHP1 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.5X1YG2 | AHP4 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.FQ5ZUR | ARR9 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.QLL4PD | ARR9 | Cytokinin |
| arahy.Tifrunner.gnm1.ann1.99WGGU | GID1B | GA |
| arahy.Tifrunner.gnm1.ann1.4I27IK | PIF4 | GA |
| arahy.Tifrunner.gnm1.ann1.QKV9FM | PIL15 | GA |
| arahy.Tifrunner.gnm1.ann1.TPQ86D | JAZ | JA |
| arahy.Tifrunner.gnm1.ann1.0B8THM | PRB1 | SA |
| arahy.Tifrunner.gnm1.ann1.FW2V6H | PRB1 | SA |
| arahy.Tifrunner.gnm1.ann1.W4QI9P | TGA10 | SA |

*Note: the pathway is referred to as KEGG plant hormone signaling pathway (id ath04075), accessed on April 29th, 2020.