

**Table S1.** Effects of *Ddw1* in the spring triticale ‘Hongor’ × ‘Dublet’ population F<sub>2:3</sub> in the greenhouse and families F<sub>3:4</sub> and F<sub>4:5</sub> in the field experiments.

| Agronomic trait                    | Statistical parameter | F <sub>2:3</sub> |                 |                 |                            | F <sub>3:4</sub> |                 |                            | F <sub>4:5</sub> |                 |                            |
|------------------------------------|-----------------------|------------------|-----------------|-----------------|----------------------------|------------------|-----------------|----------------------------|------------------|-----------------|----------------------------|
|                                    |                       | <i>ddw1ddw1</i>  | <i>Ddw1ddw1</i> | <i>Ddw1Ddw1</i> | Difference (%)             | <i>ddw1ddw1</i>  | <i>Ddw1Ddw1</i> | Difference (%)             | <i>ddw1ddw1</i>  | <i>Ddw1Ddw1</i> | Difference (%)             |
| Plant height, cm                   | Mean                  | 112.1a           | 78.8b           | 70.6c           | <b>-41.5* (-37.0%)</b>     | 118.0a           | 84.6b           | <b>-33.4* (-28.4%)</b>     | 83.4a            | 56.2b           | <b>-27.2* (-32.6%)</b>     |
|                                    | SD                    | 17.8             | 16.5            | 11.4            | LSD <sub>0.05</sub> = 7.4  | 16.4             | 11.5            | LSD <sub>0.05</sub> = 2.9  | 11.0             | 6.7             | LSD <sub>0.05</sub> = 1.2  |
|                                    | Range                 | 72.5–147         | 44–121          | 49–94           |                            | 79–158           | 50–109          |                            | 52.5–120         | 34–74.5         |                            |
| Spike length, cm                   | Mean                  | 10.5a            | 10.7a           | 10.2a           | -0.3 (-2.9%)               | 10.3a            | 10.2a           | -0.1 (-0.7%)               | 8.90a            | 8.65b           | <b>-0.24* (-2.2%)</b>      |
|                                    | SD                    | 4.1              | 3.2             | 2.7             | LSD <sub>0.05</sub> = 1.8  | 1.4              | 1.1             | LSD <sub>0.05</sub> = 0.3  | 1.3              | 1.0             | LSD <sub>0.05</sub> = 0.15 |
|                                    | Range                 | 4–3.5            | 6.5–25.0        | 5.5–19.5        |                            | 7.5–17.0         | 6.7–13.5        |                            | 4.5–13           | 6–12            |                            |
| Spikelet number per spike          | Mean                  | 21.8a            | 21.0a           | 21.2a           | -0.6 (-2.8%)               | 24.8b            | 26.3a           | <b>1.5* (5.9%)</b>         | 22.8a            | 22.7a           | -0.1 (-0.4%)               |
|                                    | SD                    | 5                | 3.9             | 6.4             | LSD <sub>0.05</sub> = 2.5  | 3.3              | 2.5             | LSD <sub>0.05</sub> = 0.6  | 3.0              | 2.6             | LSD <sub>0.05</sub> = 0.4  |
|                                    | Range                 | 5–30             | 6–27            | 3–31            |                            | 17–32            | 19–34           |                            | 11–31            | 12–29           |                            |
| Spike density                      | Mean                  | 22.3a            | 21.4a           | 21.9a           | -0.4 (-1.8%)               | 24.2b            | 25.8a           | <b>1.6* (6.5%)</b>         | 25.9b            | 26.3a           | <b>0.4* (1.7%)</b>         |
|                                    | SD                    | 9.3              | 6.2             | 9.9             | LSD <sub>0.05</sub> = 4.3  | 2.4              | 1.9             | LSD <sub>0.05</sub> = 0.05 | 28.8             | 25.0            | LSD <sub>0.05</sub> = 0.35 |
|                                    | Range                 | 5.9–56.0         | 7.7–33.9        | 3.2–50.9        |                            | 15.9–32.0        | 21.5–30.5       |                            | 16.7–33.8        | 20.0–34.3       |                            |
| Grain weight per spike             | Mean                  | 2.0a             | 1.5b            | 1.3b            | <b>-0.7* (-35%)</b>        | 3.9a             | 3.2b            | <b>-0.7* (-18.8%)</b>      | 2.1a             | 1.8b            | <b>-0.3* (-14.3%)</b>      |
|                                    | SD                    | 1                | 0.8             | 0.7             | LSD <sub>0.05</sub> = 0.4  | 1.1              | 0.8             | LSD <sub>0.05</sub> = 0.2  | 0.7              | 0.5             | LSD <sub>0.05</sub> = 0.1  |
|                                    | Range                 | 0.04–3.7         | 0.1–3.3         | 0.1–2.5         |                            | 1.9–6.6          | 1.6–5.6         |                            | 1.0–5.0          | 1.0–3.8         |                            |
| Grain number per spike             | Mean                  | 48.8a            | 44.9a           | 43.7a           | -5.1 (-10.5%)              | 68.3a            | 71.2a           | 2.9 (4.2%)                 | 49.6a            | 48.3a           | -1.3 (-2.6%)               |
|                                    | SD                    | 18.2             | 15.3            | 15.2            | LSD <sub>0.05</sub> = 8.5  | 16.3             | 12.6            | LSD <sub>0.05</sub> = 3.0  | 12.0             | 10.1            | LSD <sub>0.05</sub> = 1.4  |
|                                    | Range                 | 6–80             | 10–72           | 3–65            |                            | 34–110           | 42–113          |                            | 22–97            | 23–80           |                            |
| Grain number per spikelet          | Mean                  | 2.2a             | 2.1a            | 2.1a            | -0.1 (-4.5%)               | 2.7a             | 2.7a            | -0.04 (-1.4%)              | 2.17a            | 2.13a           | -0.04 (-4.5%)              |
|                                    | SD                    | 0.5              | 0.6             | 0.8             | LSD <sub>0.05</sub> = 0.3  | 0.5              | 0.4             | LSD <sub>0.05</sub> = 0.10 | 0.4              | 0.4             | LSD <sub>0.05</sub> = 0.05 |
|                                    | Range                 | 1.0–3.5          | 0.5–4.3         | 0.8–5.3         |                            | 1.4–4.2          | 1.6–4.0         |                            | 1.0–3.7          | 1.2–3.3         |                            |
| 1000-grain weight                  | Mean                  | 39.2a            | 32.8b           | 27.4b           | <b>-11.8* (-30.1%)</b>     | 56.7a            | 44.4b           | <b>-12.3* (-21.8%)</b>     | 42.9a            | 36.6b           | <b>-6.3* (-14.7%)</b>      |
|                                    | SD                    | 14.3             | 13              | 12.2            | LSD <sub>0.05</sub> = 6.9  | 7.7              | 6.7             | LSD <sub>0.05</sub> = 1.5  | 7.3              | 6.1             | LSD <sub>0.05</sub> = 0.9  |
|                                    | Range                 | 6.7–60.0         | 7.1–60.0        | 2.8–50.0        |                            | 33.3–72.4        | 25.1–59.1       |                            | 19.3–61.8        | 21.6–58.1       |                            |
| Number of fertile tiller           | Mean                  | 2.0a             | 1.9a            | 1.9a            | -0.1 (-5%)                 | 3.2a             | 3.0a            | -0.2 (-7.3%)               | 2.30a            | 2.17a           | -0.13 (-4.3%)              |
|                                    | SD                    | 0.8              | 0.8             | 1               | LSD <sub>0.05</sub> = 0.4  | 1.8              | 1.6             | LSD <sub>0.05</sub> = 0.4  | 1.1              | 1.0             | LSD <sub>0.05</sub> = 0.13 |
|                                    | Range                 | 1–4              | 1–3             | 1–5             |                            | 1–10             | 1–11            |                            | 1–6              | 1–6             |                            |
| Number of internodes               | Mean                  | 5.16a            | 5.05a           | 4.88b           | <b>-0.28* (-5.8%)</b>      | 5.01a            | 5.06a           | 0.05 (0.9%)                | 5.20a            | 5.09b           | <b>-0.11* (-1.9%)</b>      |
|                                    | SD                    | 0.43             | 0.47            | 0.45            | LSD <sub>0.05</sub> = 0.23 | 0.8              | 0.7             | LSD <sub>0.05</sub> = 0.16 | 0.5              | 0.6             | LSD <sub>0.05</sub> = 0.07 |
|                                    | Range                 | 4–6              | 4–6             | 4–6             |                            | 3–8              | 2–6             |                            | 4–7              | 3–6             |                            |
| Heading time (days after sowing)   | Mean                  | 41.1a            | 41.5a           | 41.6a           | 0.5 (1.2%)                 | 64.2b            | 73.1a           | <b>8.9* (13.9%)</b>        | 54.6b            | 57.7a           | <b>3.1* (5.7%)</b>         |
|                                    | SD                    | 4                | 5               | 3.9             | LSD <sub>0.05</sub> = 2.3  | 2.8              | 3.1             | LSD <sub>0.05</sub> = 0.8  | 3.4              | 5.7             | LSD <sub>0.05</sub> = 0.6  |
|                                    | Range                 | 34–49            | 13–51           | 35–48           |                            | 61–71            | 70–78           |                            | 48–72            | 53–72           |                            |
| Flowering time (days after sowing) | Mean                  | 50.6a            | 50.3a           | 50.4a           | -0.2 (-0.4%)               | 76.9b            | 81.1a           | <b>4.2* (5.5%)</b>         | 57.3b            | 61.1a           | <b>3.8* (6.6%)</b>         |
|                                    | SD                    | 3.0              | 3.1             | 3.2             | LSD <sub>0.05</sub> = 1.7  | 2.3              | 3.1             | LSD <sub>0.05</sub> = 0.7  | 3.7              | 6.1             | LSD <sub>0.05</sub> = 0.6  |
|                                    | Range                 | 44–55            | 45–55           | 46–55           |                            | 73–81            | 78–86           |                            | 53–76            | 55–76           |                            |

|                            |       |          |          |          |                           |          |          |                           |
|----------------------------|-------|----------|----------|----------|---------------------------|----------|----------|---------------------------|
| Peduncle length            | Mean  | 38.4a    | 24.9b    | 22.8b    | <b>-15.6* (-40.6%)</b>    | 30.1a    | 18.6b    | <b>-11.5* (-38.2%)</b>    |
|                            | SD    | 7.7      | 5.8      | 3.7      | LSD <sub>0.05</sub> = 3.1 | 7.8      | 4.0      | LSD <sub>0.05</sub> = 0.8 |
|                            | Range | 21–56    | 8–42     | 15–29    |                           | 7.5–82.5 | 5.5–31   |                           |
| 2nd upper internode length | Mean  | 24.9a    | 17.5b    | 16.6b    | <b>-8.3* (-33.3%)</b>     | 19.7a    | 13.2b    | <b>-6.5* (-33.0%)</b>     |
|                            | SD    | 4.2      | 3.6      | 2.6      | LSD <sub>0.05</sub> = 2.0 | 3.2      | 2.5      | LSD <sub>0.05</sub> = 0.4 |
|                            | Range | 15–31    | 10–26    | 11–21    |                           | 7.5–29.5 | 8–20.5   |                           |
| 3rd upper internode length | Mean  | 15.9a    | 12.6b    | 12.1b    | <b>-3.8* (-23.9%)</b>     | 11.7a    | 7.8b     | <b>-3.9* (-33.3%)</b>     |
|                            | SD    | 3.8      | 2.6      | 1.7      | LSD <sub>0.05</sub> = 1.5 | 2.0      | 1.6      | LSD <sub>0.05</sub> = 0.2 |
|                            | Range | 7–30     | 4.5–18.5 | 9.5–15.5 |                           | 5–18.5   | 0.5–14   |                           |
| 2nd lower internode length | Mean  | 12.3     | 9.4      | 8.6      | <b>-3.7* (-30.1%)</b>     | 7.5a     | 4.8b     | <b>-2.7* (-36.0%)</b>     |
|                            | SD    | 2.8a     | 2.0b     | 2.2b     | LSD <sub>0.05</sub> = 1.2 | 1.8      | 1.2      | LSD <sub>0.05</sub> = 0.2 |
|                            | Range | 5.5–19.0 | 5.0–15.5 | 4.5–13.0 |                           | 1.0–16.5 | 1.5–11.5 |                           |
| 1st lower internode length | Mean  | 6.3a     | 4.1b     | 4.1b     | <b>-2.2* (-34.9%)</b>     | 3.5a     | 2.5b     | <b>-1.0* (-28.6%)</b>     |
|                            | SD    | 3.3      | 2.6      | 2.3      | LSD <sub>0.05</sub> = 1.4 | 2.1      | 1.7      | LSD <sub>0.05</sub> = 0.3 |
|                            | Range | 2–15     | 0.5–11   | 1–8      |                           | 0.5–25   | 0.5–25   |                           |

Significant differences ( $p = 0.05$ ) are marked with asterisks (\*) and typed in bold; the letters demonstrate if the means are different.