**Supplementary Table 1**. Comparison of plant density (± standard error) of 14 commercial cultivars of glyphosate-tolerant *Brassica napus* grown at Melfort, Saskatchewan, and rated on 9 June 2014 and 27 May 2015.

|  |  |
| --- | --- |
|  | Plant count (number of seedlings / 6.1 m row) |
| Cultivar | 2014 | 2015 | Mean |
| 1918 | 110 ± 301 | 103 ± 32  | 107 ± 29 |
| 1970 | 108 ± 26  | 104 ± 20  | 106 ± 21 |
| 1990 | 110 ± 21 | 115 ± 25 | 113 ± 21 |
| 43E03 | 107 ± 44 | 113 ± 17  | 110 ± 31 |
| 45H29 | 92 ± 23  | 111 ± 28 | 101 ± 26 |
| 45H31 | 100 ± 32 | 104 ± 35 | 102 ± 31 |
| 73-15 RR | 114 ± 28 | 136 ± 47 | 125 ± 38 |
| 73-75 RR | 125 ± 14  | 120 ± 26 | 123 ± 20 |
| 74-44 BL | 124 ± 29 | 110 ± 35 | 117 ± 31 |
| CS2000 | --- | 121 ± 22 | --- |
| VT 500G | 108 ± 38 | 122 ± 15 | 115 ± 27 |
| VT 530G | 89 ± 35 | 114 ± 18 | 104 ± 27 |
| VT 531G | 118 ± 31 | 100 ± 9.0 | 109 ± 23 |
| VT Barrier | 101 ± 18 | 92 ± 14 | 96 ± 16 |
| df | 12, 35 | 13, 42 | 12, 66 |
| *F* = | 1.03 | 0.72 | 1.02 |
| *P* = | 0.44 | 0.74 | 0.44 |

1Means within columns are not significantly different by analysis of variance and Tukey’s studentised range test.

**Supplementary Table 2**. Median growth stage (GS) and mean probability of injury rating of 0 (PR0): no injury, or 1 (PR1): up to one third of buds and flowers injured, by *Contarinia* midge complex to primary flowering racemes of 13 commercial cultivars of Roundup Ready *Brassica napus* canola on five sampling dates at Melfort, Saskatchewan, in 2014.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 10 July | 16 July |  | 23 July | 29 July | 6 August |  |
| Cultivar | GS | PR0 | PR1 | GS | PR0 | PR1 | GS | PR0 | PR1 | GS | PR0 | PR1 | GS | PR0 | PR1 |  |
| 1918 | 4.1 | 0.96 | 0.03 | 4.2 | 0.96 | 0.04 | 4.3 | 0.93 | 0.06 | 4.4 | 0.90 | 0.09 | 5.2 | 0.68 | 0.28 |  |
| 1970 | 3.3 | 0.99 | <0.01 | 4.2 | 0.98 | 0.02 | 4.3 | 0.95 | 0.05 | 4.4 | 0.85 | 0.14 | 5.2 | 0.66 | 0.30 |  |
| 1990 | 4.2 | 0.91 | 0.08 | 4.2 | 0.93 | 0.07 | 4.4 | 0.94 | 0.06 | 5.1 | 0.90 | 0.09 | 5.2 | 0.69 | 0.27 |  |
| 43E03 | 4.2 | 0.95 | 0.05 | 4.3 | 0.96 | 0.03 | 4.4 | 0.92 | 0.07 | 5.1 | 0.90 | 0.09 | 5.2 | 0.73 | 0.25 |  |
| 45H29 | 4.1 | 0.99 | <0.01 | 4.2 | 0.94 | 0.06 | 4.4 | 0.90 | 0.09 | 4.4 | 0.87 | 0.12 | 5.2 | 0.68 | 0.29 |  |
| 45H31 | 4.1 | 0.97 | 0.03 | 4.2 | 0.95 | 0.05 | 4.3 | 0.86 | 0.13 | 4.4 | 0.81 | 0.18 | 5.1 | 0.58 | 0.37 |  |
| 73-15RR | 4.2 | 0.97 | 0.03 | 4.3 | 0.97 | 0.03 | 4.4 | 0.93 | 0.06 | 5.1 | 0.93 | 0.07 | 5.2 | 0.81 | 0.17 |  |
| 73-75RR | 4.2 | 0.99 | <0.01 | 4.2 | 0.99 | 0.01 | 4.4 | 0.97 | 0.03 | 4.4 | 0.86 | 0.13 | 5.2 | 0.78 | 0.20 |  |
| 74-44BL | 4.2 | 0.99 | <0.01 | 4.2 | 0.93 | 0.06 | 4.4 | 0.91 | 0.08 | 5.1 | 0.89 | 0.10 | 5.1 | 0.72 | 0.25 |  |
| VT 500G | 3.3 | 0.96 | 0.03 | 4.1 | 0.98 | 0.01 | 4.3 | 0.96 | 0.04 | 4.3 | 0.91 | 0.08 | 5.1 | 0.73 | 0.24 |  |
| VT 530G | 4.1 | 0.99 | <0.01 | 4.2 | 0.95 | 0.04 | 4.4 | 0.92 | 0.08 | 4.4 | 0.92 | 0.07 | 5.2 | 0.73 | 0.24 |  |
| VT 531G | 4.2 | 0.99 | <0.01 | 4.3 | 0.93 | 0.07 | 4.3 | 0.92 | 0.07 | 5.1 | 0.93 | 0.07 | 5.2 | 0.83 | 0.15 |  |
| VT Barrier | 4.1 | 0.99 | <0.01 | 4.1 | 0.96 | 0.03 | 4.3 | 0.93 | 0.07 | 4.3 | 0.93 | 0.07 | 5.1 | 0.70 | 0.27 |  |
| df | 12,25 | 8, 403 | 12,32 | 12, 454 | 12,33 | 12, 501 | 12,31 | 12, 34 | 12, 507 | 12,35 |  |
| *F* = | 2.82 | 0.00 | 1.26 | 0.45 | 1.13 | 0.61 | 2.46 | 1.12 | 1.70 | 1.16 |  |
| *P* = | 0.01 | 1.00 | 0.29 | 0.94 | 0.37 | 0.83 | 0.02 | 0.38 | 0.06 | 0.35 |  |

Over all dates there were significant differences in growth stage (df = 12, 3078, *F* = 5.25, *P* ≤ 0.001) among cultivars, but there were no significant differences in *Contarinia* midge injury (df = 12, 2513, *F* = 0.88, *P* = 0.56), multinomial cumulative logit analyses.

**Supplementary Table 3**. Median growth stage (GS) and mean probability of injury rating of 0 (PR0): no injury, or 1 (PR1): up to one third of buds and flowers injured, by *Contarinia* midge complex to primary flowering racemes of 14 commercial cultivars of Roundup Ready *Brassica napus* canola on five sampling dates at Melfort, Saskatchewan, in 2015.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 9 July | 17 July | 22 July | 31 July | 5 August |
| Cultivar | GS | PR0 | GS | PR0 | PR1 | GS | PR0 | PR1 | GS | PR0 | PR1 | GS | PR0 | PR1 |
| 1918 | 3.3 | 1.0 | 4.3 | 0.44 | 0.47 | 4.3 | 0.44 | 0.47 | 4.3 | 0.52 | 0.42 | 5.1 | 0.60 | 0.35 |
| 1970 | 3.3 | 1.0 | 4.2 | 0.55 | 0.39 | 4.3 | 0.49 | 0.44 | 4.3 | 0.41 | 0.49 | 5.1 | 0.58 | 0.37 |
| 1990 | 3.3 | 1.0 | 4.3 | 0.32 | 0.54 | 4.3 | 0.47 | 0.45 | 4.4 | 0.53 | 0.41 | 5.1 | 0.61 | 0.34 |
| 43E03 | 3.3 | 1.0 | 4.3 | 0.49 | 0.44 | 4.3 | 0.41 | 0.49 | 4.4 | 0.52 | 0.42 | 5.2 | 0.65 | 0.31 |
| 45H29 | 4.1 | 1.0 | 4.2 | 0.36 | 0.52 | 4.3 | 0.34 | 0.53 | 4.3 | 0.44 | 0.47 | 5.2 | 0.59 | 0.36 |
| 45H31 | 3.3 | 1.0 | 4.3 | 0.40 | 0.50 | 4.3 | 0.26 | 0.56 | 4.4 | 0.33 | 0.54 | 5.1 | 0.49 | 0.44 |
| 73-15RR | 4.1 | 1.0 | 4.3 | 0.52 | 0.41 | 4.3 | 0.44 | 0.47 | 4.4 | 0.59 | 0.36 | 5.1 | 0.75 | 0.23 |
| 73-75RR | 3.3 | 1.0 | 4.3 | 0.71 | 0.26 | 4.3 | 0.64 | 0.32 | 4.4 | 0.42 | 0.48 | 5.1 | 0.71 | 0.26 |
| 74-44BL | 4.1 | 1.0 | 4.2 | 0.34 | 0.53 | 4.3 | 0.38 | 0.51 | 4.3 | 0.48 | 0.44 | 5.1 | 0.64 | 0.32 |
| CS2000 | 3.2 | 1.0 | 4.3 | 0.59 | 0.11 | 4.3 | 0.46 | 0.36 | 4.3 | 0.44 | 0.47 | 5.1 | 0.56 | 0.39 |
| VT 500G | 3.3 | 1.0 | 4.3 | 0.71 | 0.26 | 4.3 | 0.59 | 0.36 | 4.3 | 0.55 | 0.39 | 4.4 | 0.66 | 0.31 |
| VT 530G | 3.3 | 1.0 | 4.3 | 0.43 | 0.48 | 4.3 | 0.39 | 0.51 | 4.3 | 0.58 | 0.37 | 4.4 | 0.65 | 0.31 |
| VT 531G | 3.3 | 1.0 | 4.3 | 0.31 | 0.54 | 4.3 | 0.42 | 0.49 | 4.3 | 0.59 | 0.36 | 5.1 | 078 | 0.20 |
| VT Barrier | 3.3 | 1.0 | 4.3 | 0.50 | 0.43 | 4.3 | 0.42 | 0.49 | 4.4 | 0.60 | 0.35 | 5.2 | 0.61 | 0.34 |
| df | 13,40 | --- | 13,36 | 13, 36 | 13,38 | 13, 38 | 13, 35 | 13, 39 | 13, 29 | 13, 44 |
| *F* = | 1.70 | --- | 0.94 | 1.50 | 1.37 | 1.48 | 1.70 | 1.21 | 2.11 | 1.54 |
| *P* = | 0.10 | --- | 0.53 | 0.16 | 0.22 | 0.17 | 0.10 | 0.31 | 0.05 | 0.14 |

Over all dates there were no significant differences in growth stage (df =13, 3876, *F* = 1.37, *P* = 0.17) or *Contarinia*  midge injury (df =13, 2406, *F* = 0.50, *P* = 0.93) among cultivars, multinomial cumulative logit analyses.