**Figure 4-source data 1.** Assay for male reproductive competitiveness of *nGuy1-1* and *nGuy1-2* lines 1. This table contains the source data for Figure 4.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | nGuy1-1 Male No. (P) 2, 3 | nGuy1-1 female No. (P) 2 | non-transgenic male No. (P) 2 | non-transgenic  female No. (P) 2 | | Total of all genotypes | |
| Replicate 1 | 43 (24.57%) | 0 (0) | 62 (35.43%) | 70 (40%) | | 175 | |
| Replicate 2 | 38 (31.15%) | 0 (0) | 36 (29.51%) | 48 (39.34%) | 122 | |
| Replicate 3 | 47 (15.67%) | 0 (0) | 122 (40.67%) | 131 (43.67%) | | 300 | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | nGuy1-2 Male No. (P) 2, 3 | nGuy1-2 female No. (P) 2 | non-transgenic male No. (P) 2 | non-transgenic  female No. (P) 2 | | Total of all genotypes | |
| Replicate 1 | 130 (30.63%) | 0 (0) | 153 (37.23%) | 128 (31.14%) | | 411 | |
| Replicate 2 | 33 (15.87%) | 0 (0) | 81 (38.94%) | 94 (45.19%) | 208 | |
| Replicate 3 | 75 (18.16%) | 0 (0) | 170 (41.16%) | 168 (40.68%) | | 413 | |

Notes:

1. Methods of the assay: Sibling cohorts of 20 transgenic and 20 non-transgenic males were mated with 10 wild type females. The resulting progeny were screened for the dsRED marked and sexed at L3 instar stage.
2. No. (P): Number (No.) and proportion or percentage (P) of individuals of a certain genotype. The percentage (P) is calculated by dividing the observed number of individuals of a genotype by the total of all genotypes during each biological replicates. For example, there are (43+62+70)=175 total progeny in replicate 1 for the *nGuy1-1* line. Therefore, the percentage of transgenic males (AGUY1aXY) is 43/175=24.57%.
3. The expected proportion or percentage of each genotype in the progeny can be calculated according to the following. Transgenic AGUY1aXY mate with aaXX will produce AGUY1aXY, AGUY1aXX, aaXY, and aaXX at a 1:1:1:1 ratio. Non-transgenic aaXY mate with aaXX will produce aaXY, aaXX, aaXY, and aaXX at a 1:1:1:1 ratio. Assuming that AGUY1aXY and aaXY males are reproductively equal, the ratio of progeny from females mated with equal number of AGUY1aXY and aaXY males will be AGUY1aXY:AGUY1aXX: aaXY:aaXX= 1:1 :(1+2): (1+2)=1:1:3:3. Given that AGUY1aXX dies prior to or soon after egg hatching, at L3 instar, AGUY1aXY will be expected to represent 1/(1+3+3) or 1/7 of the total progeny, while aaXY and aaXX will represent 3/7 each. The percentage of DsRed positive (or transgenic) male progeny is significantly higher than the expected value (1/7, or 14.29%). This is confirmed by one-sample proportion tests for both *nGuy1-1* and *nGuy1-2* lines (Z=5.0 and 8.1, respectively; p<0.001 in both cases). Percentage data shown in this column are used to graph Figure 4.