**Supplementary Table 6 |** Variance components and proportion of the phenotypic variance contributed by each variance component in the pooled Chang7-2 × RIL (TC)- Mo17 × RIL (TM) population

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | PH | EH | RNPE | KNPR | KT | KW | KL | VW | HGW | GY |
|  | 18.06 | 28.23 | 0.14 | 0.65 | 1.84 | 1.34 | 3.77 | 98.47 | 0.63 | 13.9 |
|  | 42.94 | 33.73 | 0.37 | 3.15 | 2.15 | 9.65 | 12.9 | 138.38 | 4.5 | 40.74 |
|  | 66.92 | 36.19 | 0.18 | 1.64 | 2.7 | 2.69 | 3.24 | 133.13 | 0.97 | 23.45 |
|  | 64.2 | 19.8 | 0.15 | 1.5 | 1.9 | 2.6 | 3.83 | 157.59 | 0.87 | 20.19 |
|  | 37.45 | 13.52 | 0.12 | 1.5 | 1.68 | 3.26 | 4.82 | 127.53 | 0.99 | 23.08 |
|  | 13.53 | 7.39 | 0.11 | 1.61 | 1.1 | 2.6 | 4.91 | 239.9 | 1.16 | 49.45 |
|  | 0.07 | 0.20 | 0.13 | 0.06 | 0.16 | 0.06 | 0.11 | 0.11 | 0.07 | 0.08 |
|  | 0.18 | 0.24 | 0.34 | 0.31 | 0.19 | 0.44 | 0.39 | 0.15 | 0.49 | 0.24 |
|  | 0.28 | 0.26 | 0.16 | 0.16 | 0.24 | 0.12 | 0.10 | 0.15 | 0.11 | 0.14 |
|  | 0.26 | 0.14 | 0.14 | 0.15 | 0.17 | 0.12 | 0.11 | 0.18 | 0.10 | 0.12 |
|  | 0.15 | 0.10 | 0.11 | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.11 | 0.14 |

All genetic variance is calculated by = ;

, the genetic proportion of additive effect, calculated by ;

, the genetic proportion of dominance effect, calculated by ;

, the genetic proportion of additive-by-additive effect, calculated by ;

, the genetic proportion of additive-by-dominance effect, calculated by ;

, the genetic proportion of dominance-by-dominance effect, calculated by .

PH, plant height; EH, ear height; RNPE, row number per ear; KNPR, kernel number per row; KT, kernel thickness; KW, kernel width; KL, kernel length; VW, volume weight; HGW, hundred grain weight; GY, grain yield per plant.