

**Table S1.** Reads and mapping results.

| Specie  | Genotype | Nitrogen Level | Reads Total Number | Reads Total Number (cleaned) | Reads Mapped | Reads mean | Reads Mapped mean | %    |
|---|----------|----------------|--------------------|------------------------------|--------------|------------|-------------------|------|
| <b>emmer</b><br><i>Triticum turgidum</i><br><i>ssp. dicoccum</i>                              | Molise   | +N             | 12,426,327         | 11,729,149                   | 8,634,292    | 14,514,858 | 10,578,245        | 72.9 |
|   |          |                | 15,048,113         | 13,952,143                   | 10,324,849   |            |                   |      |
|   |          |                | 14,903,919         | 14,109,719                   | 9,863,795    |            |                   |      |
|   |          |                | 19,540,053         | 18,268,422                   | 13,490,043   |            |                   |      |
|   |          | -N             | 14,549,043         | 13,877,108                   | 9,621,513    | 12,123,763 | 8,512,069         | 70.2 |
|   |          |                | 15,385,878         | 14,271,168                   | 10,653,558   |            |                   |      |
|   |          |                | 10,419,996         | 9,732,724                    | 6,506,270    |            |                   |      |
|   |          |                | 11,085,787         | 10,614,052                   | 7,266,933    |            |                   |      |
|   |          |                | 11,679,027         | 10,989,390                   | 7,657,401    |            |                   |      |
|   |          |                | 14,556,720         | 13,748,679                   | 9,989,064    |            |                   |      |
| <b>durum wheat</b><br><i>Triticum turgidum</i><br><i>ssp. turgidum</i><br><i>convar durum</i> | Simeto   | +N             | 13,016,891         | 12,037,935                   | 8,523,540    | 12,161,459 | 8,247,526         | 67.8 |
|   |          |                | 12,548,405         | 11,869,831                   | 6,820,097    |            |                   |      |
|   |          |                | 14,047,180         | 13,176,130                   | 9,423,828    |            |                   |      |
|   |          | -N             | 16,677,090         | 15,519,511                   | 10,966,290   | 13,197,161 | 9,291,518         | 70.4 |
|   |          |                | 15,471,231         | 14,636,407                   | 10,024,095   |            |                   |      |
|   |          |                | 9,905,802          | 9,456,597                    | 6,751,858    |            |                   |      |
|   |          |                |                    |                              |              |            |                   |      |