

Table S1.- Matrix of presence/absence of 117 nuclear SSRs analysed in the twelve genotypes of the three *Brachypodium* species.

| SSR name | Genotype |        |        |         |        |        |        |        |        |        |        |         |
|----------|----------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|---------|
|          | Bd 21    | Bd 160 | Bd 700 | Bd 3113 | Bs 114 | Bs 115 | Bs 129 | Bs 485 | Bh 217 | Bh 409 | Bh 486 | Bh 3107 |
| ssr3_1   | 0        | 0      | 0      | 1       | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0       |
| ssr3_2   | 1        | 0      | 0      | 1       | 0      | 1      | 0      | 0      | 1      | 0      | 1      | 0       |
| ssr3_3   | 1        | 1      | 1      | 1       | 0      | 1      | 0      | 0      | 1      | 1      | 0      | 1       |
| ssr3_6   | 0        | 0      | 0      | 0       | 1      | 0      | 0      | 1      | 0      | 0      | 0      | 0       |
| ssr3_7   | 0        | 0      | 0      | 0       | 1      | 1      | 1      | 1      | 1      | 0      | 0      | 0       |
| ssr3_8   | 0        | 1      | 1      | 0       | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       |
| ssr3_9   | 0        | 0      | 0      | 0       | 0      | 1      | 1      | 0      | 1      | 0      | 0      | 0       |
| ssr3_10  | 0        | 1      | 0      | 0       | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0       |
| ssr3_11  | 0        | 0      | 0      | 0       | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0       |
| ssr3_12  | 0        | 0      | 0      | 1       | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0       |
| ssr3_13  | 0        | 0      | 1      | 0       | 0      | 1      | 0      | 0      | 1      | 1      | 0      | 0       |
| ssr3_14  | 0        | 0      | 0      | 0       | 0      | 1      | 0      | 0      | 1      | 0      | 0      | 1       |
| ssr16_1  | 0        | 0      | 0      | 0       | 1      | 1      | 1      | 1      | 0      | 0      | 0      | 0       |
| ssr16_3  | 1        | 1      | 1      | 1       | 0      | 1      | 1      | 0      | 1      | 1      | 1      | 1       |
| ssr16_4  | 1        | 0      | 1      | 1       | 1      | 1      | 0      | 0      | 1      | 1      | 1      | 1       |
| ssr16_5  | 0        | 1      | 0      | 0       | 1      | 1      | 1      | 1      | 0      | 0      | 0      | 0       |
| ssr16_6  | 0        | 0      | 0      | 0       | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0       |
| ssr16_8  | 0        | 0      | 0      | 0       | 1      | 1      | 1      | 1      | 0      | 0      | 0      | 0       |
| ssr16_9  | 0        | 0      | 0      | 0       | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0       |
| ssr8_2   | 0        | 0      | 0      | 0       | 0      | 0      | 0      | 0      | 1      | 1      | 1      | 1       |
| ssr8_3   | 0        | 0      | 0      | 0       | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0       |
| ssr8_4   | 0        | 0      | 0      | 0       | 0      | 0      | 0      | 0      | 1      | 1      | 1      | 1       |
| ssr13_1  | 0        | 0      | 0      | 0       | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0       |
| ssr13_2  | 0        | 0      | 0      | 0       | 1      | 1      | 0      | 0      | 0      | 0      | 0      | 0       |
| ssr13_3  | 0        | 0      | 0      | 0       | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       |
| ssr13_4  | 0        | 0      | 0      | 0       | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 1       |
| ssr13_5  | 0        | 0      | 0      | 0       | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0       |
| ssr13_6  | 0        | 0      | 0      | 0       | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0       |



|          |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|
| ssr17-8  | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| ssr17-9  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| ssr17-10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-13 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-14 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr17-16 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-17 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr17-18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-19 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr17-20 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-21 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr17-22 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr17-23 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr17-24 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr17-25 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr19-5  | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| ssr19-6  | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| ssr19-7  | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| ssr19-8  | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ssr19-9  | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| ssr20-1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| ssr20-2  | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| ssr20-4  | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| ssr20-5  | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| ssr20-6  | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr20-7  | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| ssr20-8  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr20-9  | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr20-11 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr5-2   | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr5-4   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| ssr5-5   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| ssr5-8   | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |

|         |   |   |   |   |   |   |   |   |   |   |   |   |
|---------|---|---|---|---|---|---|---|---|---|---|---|---|
| ssr5-9  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| ssr5-11 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ssr5-13 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| ssr5-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| ssr5-15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr5-19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| ssr5-23 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ssr5-24 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| ssr5-26 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| ssr5-27 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| ssr18-1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| ssr18-2 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| ssr18-3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| ssr18-4 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ssr18-6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ssr18-7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| ssr18-8 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |