**Supplementary Material**

**Supplementary Table 1.** Low-sized Arabica coffee cultivars (*Coffea arabica* L.) evaluated.

|  |  |  |
| --- | --- | --- |
| Cultivars | Breeding  program | Characteristics |
| IAC Catuaí SH3 | IAC | High rust resistance, high vigour, medium to late ripening, drought tolerance, red fruits |
| Cauaí Amarelo IAC 62 | Susceptible to rust, high productive potential with fruit maturation ranging from medium to late, superior vegetative vigor, recommended for dense plantings, yellow fruits |
| Catuaí Vermelho IAC 99 | Susceptible to rust, high productive potential with fruit maturation ranging from medium to late, superior vegetative vigor, recommended for dense plantings, red fruits |
| IAC Ouro Verde | Susceptible to rust, high vegetative vigor, high productivity, medium maturation and red colored fruits |
| IAC Ouro Amarelo | Susceptible to rust, high vegetative vigor, high productivity, medium maturation and yellow fruits |
| Obatã IAC 1669-20 | Moderate resistance to rust, high vegetative vigor, large red fruits with medium to late maturation, recommended for irrigated plantations |
| IAC Obatã 4739 | Moderate resistance to rust, high vegetative vigor, large yellow fruits with medium to late maturation, recommended for irrigated plantations |
| Tupi IAC 1669-33 | Rust resistant and susceptible to brown eye spot, low vegetative vigor, high productivity, especially in the first harvests, with red fruit and early to medium maturation. |
| IAC 125 RN | Resistance to rust and root-knot nematode, medium vegetative vigor, high initial productivity with wine-colored fruits and medium maturation, nutritionally demanding |
| Catiguá MG1 | EPAMIG | Resistance to the main races of rust, high vegetative vigor, young leaves of light bronze color, high productivity with fruits of red color and medium maturation |
| Oeiras MG 6851 | Moderate resistance to rust, medium vegetative vigor, medium to high productivity, varying with environmental conditions, red fruits with early and uniform maturation |
| Pau-Brasil MG1 | Susceptible to some rust races, high vegetative vigor, high productivity and red fruits of medium maturation |
| Sacramento MG1 | Resistance to the main rust races, very high vegetative vigor, high productivity in the first harvests and ripening red fruits |
| IPR 99 | IAPAR | Rust resistance, high vegetative vigor, wide adaptability capacity to the different conditions of the coffee growing regions in Brazil, high productive potential and yellow fruits with semi-late maturation |
| IPR 100 | Susceptible to rust, tolerance to drought and warmer temperatures (annual average equal to or greater than 21°C), high productivity and red fruit with maturation ranging from late to super late |
| IPR 103 | Moderate susceptibility to rust, hardiness in drought and higher temperatures, light bronze young leaves, high vegetative vigor, high productivity with red fruits and late maturation |
| Sabiá Tardio | PROCAFÉ | Moderate rust resistance, high vegetative vigor, high productivity, red fruits and late maturation, being sensitive to acidic soils and demanding in nutrition |

IAC: Instituto Agronômico de Campinas; EPAMIG: Empresa de Pesquisa Agropecuária de Minas Gerais; IAPAR: Instituto Agronômico do Paraná; PROCAFÉ: Fundação Procafé. Source: Botelho et al. (2008); Pereira and Baião (2015).

**Supplementary Table 2.** Soil chemical attributes (layer 0-20 cm) in the experimental area

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Seasons1 | pH | OM | P | S | K | Ca | Mg | H+Al | SB | CEC | V |
| (CaCl2) | (g/dm3) | (mg/dm3) | | (mmolc/dm3) | | | | | | (%) |
| 1ª Season | 5.9 | 15 | 79 | 4 | 6.1 | 28 | 19 | 15 | 53,1 | 68,1 | 78 |
| 2ª Season | 5.7 | 17 | 71 | 4 | 4.7 | 33 | 15 | 20 | 53,0 | 73,2 | 72 |
| 3ª Season | 5.5 | 13 | 32 | 5 | 3.0 | 22 | 10 | 14 | 34,4 | 48,5 | 71 |
| 4ª Season | 5.9 | 26 | 41 | 9 | 5.6 | 28 | 13 | 14 | 47,3 | 61,8 | 77 |
| Micronutrients | | | | | | | | | | | |
| Seasons1 | B | | Cu | | Fe | | Mn | | Zn | |  |
| (mg/dm3) | | | | | | | | | | |
| 1ª Season | 0.19 | | 0.5 | | 14 | | 9.7 | | 2.7 | |  |
| 2ª Season | 0.20 | | 0.9 | | 12 | | 8.8 | | 2.9 | |  |
| 3ª Season | 0.24 | | 1.7 | | 17 | | 21.9 | | 2.4 | |  |
| 4ª Season | 0.40 | | 0.9 | | 15 | | 20.5 | | 2.6 | |  |

1 1ª Season: agricultural year 2014/2015; 2ª season: agricultural year 2015/2016; 3ª season: agricultural year 2016/2017; 4ª season: agricultural year 2017/2018. OM: organic matter; SB: sum of bases; CEC:cátion Exchange capacity; V: base saturation

**Supplementary Table 3.** Percentage of green (G) and cane-green fruits (CG) fruits of Arabica coffee cultivars

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | G | CG |  | G | CG |  | G | CG |  | G | CG |  | G | CG |
| 1ª Season | |  | 2ª Season | |  | 3ª Season | |  | 4ª Season | |  | Mean | |
| SH3 | 11.5 d | 9.0 |  | 22.8 b | 6.8 b |  | 28.8 c | 11.0 a |  | 26.0 a | 10.8 |  | 28.3 b | 9.4 b |
| CA62 | 13.9 d | 14.9 |  | 7.3 d | 5.5 b |  | 31.0 c | 7.0 b |  | 28.1 a | 13.8 |  | 20.1 c | 10.3 b |
| CV99 | 16.9 d | 16.3 |  | 8.3 d | 9.5 a |  | 24.8 c | 6.0 b |  | 23.1 a | 11.1 |  | 18.3 c | 10.7 a |
| OrV | 13.9 d | 15.5 |  | 8.8 d | 5.0 b |  | 29.0 c | 11.5 a |  | 14.8 b | 14.3 |  | 16.6 d | 11.6 a |
| OrA | 7.6 d | 12.4 |  | 10.3 d | 5.0 b |  | 25.0 c | 7.3 b |  | 23.1 a | 21.8 |  | 16.5 d | 11.6 a |
| ObV | 23.1 c | 11.3 |  | 36.0 a | 10.5 a |  | 36.3 b | 14.0 a |  | 38.0 a | 13.4 |  | 33.3 b | 12.3 a |
| ObA | 69.1 a | 6.9 |  | 45.8 a | 12.8 a |  | 49.8 a | 9.0 a |  | 33.8 a | 12.8 |  | 49.6 a | 10.4 a |
| Tupi | 12.0 d | 12.5 |  | 11.5 d | 9.5 a |  | 18.5 d | 10.0 a |  | 7.0 b | 14.8 |  | 12.3 e | 11.7 a |
| IAC125 | 9.1 d | 15.6 |  | 7.5 d | 6.3 b |  | 16.0 d | 6.8 b |  | 7.1 b | 22.3 |  | 9.9 e | 12.7 a |
| Catiguá | 45.6 b | 6.9 |  | 22.0 b | 9.5 a |  | 28.0 c | 9.8 a |  | 25.3 a | 12.9 |  | 30.2 b | 9.8 b |
| Oeiras | 11.9 d | 10.5 |  | 16.3 c | 4.0 b |  | 16.8 d | 5.8 b |  | 13.0 b | 15.9 |  | 14.5 d | 9.0 b |
| PBr | 8.1 d | 12.6 |  | 12.5 c | 2.8 b |  | 16.0 d | 5.8 b |  | 16.9 b | 14.1 |  | 13.4 e | 8.8 b |
| Sacr | 22.6 c | 9.9 |  | 16.0 c | 4.5 b |  | 17.8 d | 5.3 b |  | 10.5 b | 12.9 |  | 16.7 d | 8.1 b |
| IPR99 | 27.9 c | 20.1 |  | 19.8 b | 5.0 b |  | 21.6 d | 10.9 a |  | 21.1 a | 15.8 |  | 22.6 c | 12.9 a |
| IPR100 | 15.0 d | 10.0 |  | 26.5 b | 5.3 b |  | 39.3 b | 11.5 a |  | 34.0 a | 11.6 |  | 28.7 b | 9.6 b |
| IPR103 | 8.8 d | 5.0 |  | 17.0 c | 4.0 b |  | 38.5 b | 8.0 b |  | 29.3 a | 9.1 |  | 23.4 c | 6.5 b |
| Sabiá | 11.3 d | 13.3 |  | 12.8 c | 5.3 b |  | 25.3 c | 9.0 a |  | 28.0 a | 21.3 |  | 19.3 c | 12.2 a |
| F | 15.37\*\* | 1.65NS |  | 15.72\*\* | 6.08\*\* |  | 7.87\*\* | 2.03\* |  | 4.33\*\* | 1.59NS |  | 37.70\* | 2.19\* |
| CV (%) | 14.93 | 23.59 |  | 17.98 | 34.52 |  | 27.18 | 40.44 |  | 26.85 | 21.96 |  | 14.44 | 5.87 |
| Mean | 19.3 | 11.9 |  | 17.7 | 6.5 |  | 25.0 | 8.7 |  | 22.3 | 14.61 |  | 22.0 | 10.4 |

SH3: IAC Catuaí SH3; CA62: Catuaí Amarelo IAC 62; CV99: Catuaí Vermelho IAC 99; OrV: IAC Ouro Verde; OrA: IAC Ouro Amarelo; ObV: Obatã IAC 1669-20; ObA: IAC Obatã 4739; Tupi: Tupi IAC 1669-33; IAC125: IAC 125 RN; Catiguá MG1; Oeiras: Oeiras MG 6851; PBr: Pau-Brasil MG1; Sacr: Sacramento MG1; IPR99: IPR 99; IPR100: IPR 100; IPR103: IPR 103; Sabiá: Sabiá Tardio. Means followed by the same letter do not differ from each other by the Scott-Knott test at the 5% probability level. NS: not significant. \*Significant at 5% probability. \*\*Significant at 1% probability. CV: coefficient of variation

**Supplementary Table 4.** Percentage of cherry (C) and raisin + dry (R+D) fruits of Arabica coffee cultivars

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | C | R+D |  | C | R+D |  | C | R+D |  | C | R+D |  | C | R+D |
| 1ª Season | |  | 2ª Season | |  | 3ª Season | |  | 4ª Season | |  | Mean | |
| SH3 | 49.8 a | 21.9 b |  | 60.3 b | 10.3 b |  | 9.8 b | 50.5 b |  | 52.0 b | 11.3 a |  | 42.9 b | 23.5 a |
| CA62 | 64.3 a | 7.0 c |  | 65.0 b | 22.3 a |  | 8.0 b | 54.0 b |  | 45.0 b | 13.1 a |  | 45.6 b | 24.1 a |
| CV99 | 58.1 a | 8.8 c |  | 55.0 b | 27.3 a |  | 7.5 b | 61.8 b |  | 53.4 b | 12.4 a |  | 43.5 b | 27.5 a |
| OrV | 56.9 a | 13.8 b |  | 67.5 a | 18.8 a |  | 10.8 a | 48.8 b |  | 52.9 b | 18.1 a |  | 47.0 b | 24.8 a |
| OrA | 68.8 a | 11.3 c |  | 64.0 b | 20.8 a |  | 9.8 b | 58.0 b |  | 47.1 b | 8.0 b |  | 47.4 b | 24.5 a |
| ObV | 58.1 a | 7.5 c |  | 19.0 c | 34.5 a |  | 14.3 a | 35.5 c |  | 41.8 b | 6.9 b |  | 33.3 c | 21.1 b |
| ObA | 21.3 c | 2.8 c |  | 2.0 d | 39.5 a |  | 13.0 a | 28.3 c |  | 48.0 b | 5.5 b |  | 21.1 d | 19.0 b |
| Tupi | 59.3 a | 16.3 b |  | 64.0 b | 15.0 b |  | 13.0 a | 58.5 b |  | 61.5 a | 16.8 a |  | 49.4 a | 26.6 a |
| IAC125 | 60.0 a | 15.3 b |  | 69.8 a | 16.5 b |  | 7.3 b | 70.0 a |  | 54.1 b | 16.5 a |  | 47.8 b | 29.6 a |
| Catiguá | 27.5 c | 20.0 b |  | 57.5 b | 11.0 b |  | 7.8 b | 54.5 b |  | 47.7 b | 14.1 a |  | 35.1 c | 24.9 a |
| Oeiras | 64.4 a | 13.3 b |  | 70.3 a | 9.5 b |  | 9.8 b | 67.8 a |  | 64.1 a | 7.0 b |  | 52.1 a | 24.4 a |
| PBr | 61.4 a | 17.9 b |  | 79.5 a | 5.3 b |  | 7.3 b | 71.0 a |  | 61.5 a | 7.5 b |  | 52.4 a | 25.4 a |
| Sacr | 35.4 b | 32.1 a |  | 68.8 a | 10.8 b |  | 8.0 b | 69.0 a |  | 65.3 a | 11.4 b |  | 44.3 b | 30.8 a |
| IPR99 | 42.1 b | 9.9 c |  | 61.8 b | 13.5 b |  | 11.1 a | 56.4 b |  | 44.3 b | 18.9 a |  | 39.8 b | 24.7 a |
| IPR100 | 69.8 a | 5.3 c |  | 60.0 b | 8.3 b |  | 14.5 a | 34.8 c |  | 45.4 b | 9.0 b |  | 47.4 b | 14.3 b |
| IPR103 | 73.8 a | 12.5 b |  | 68.5 a | 10.5 b |  | 14.0 a | 39.5 c |  | 51.9 b | 9.8 b |  | 52.0 a | 18.1 b |
| Sabiá | 66.1 a | 9.4 c |  | 70.0 a | 12.0 b |  | 7.3 b | 58.5 b |  | 41.8 b | 9.0 b |  | 46.3 b | 22.2 a |
| F | 10.42\*\* | 6.38\*\* |  | 29.13\*\* | 5.59\*\* |  | 1.76NS | 8.02\*\* |  | 2.24\* | 3.47\*\* |  | 18.17\*\* | 4.33\*\* |
| CV (%) | 16.95 | 28.14 |  | 12.17 | 20.18 |  | 39.87 | 17.04 |  | 36.43 | 17.52 |  | 8.54 | 16.46 |
| Mean | 55.1 | 13.2 |  | 59.0 | 16.8 |  | 10.2 | 53.9 |  | 51.6 | 11.5 |  | 44.0 | 23.9 |

SH3: IAC Catuaí SH3; CA62: Catuaí Amarelo IAC 62; CV99: Catuaí Vermelho IAC 99; OrV: IAC Ouro Verde; OrA: IAC Ouro Amarelo; ObV: Obatã IAC 1669-20; ObA: IAC Obatã 4739; Tupi: Tupi IAC 1669-33; IAC125: IAC 125 RN; Catiguá MG1; Oeiras: Oeiras MG 6851; PBr: Pau-Brasil MG1; Sacr: Sacramento MG1; IPR99: IPR 99; IPR100: IPR 100; IPR103: IPR 103; Sabiá: Sabiá Tardio. Means followed by the same letter do not differ from each other by the Scott-Knott test at the 5% probability level. NS: not significant. \*Significant at 5% probability. \*\*Significant at 1% probability. CV: coefficient of variation

**Supplementary Table 5.** Average percentage of flat grain retention above sieves 17 (S17) and 15 (S15)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | S17 | S15 |  | S17 | S15 |  | S17 | S15 |  | S17 | S15 |  | S17 | S15 |
| 1ª Season | |  | 2ª Season | |  | 3ª Season | |  | 4ª Season | |  | Mean | |
| SH3 | 15.8 e | 46.4 a |  | 46.2 c | 32.9 c |  | 40.7 a | 37.1 c |  | 30.2 d | 46.3 b |  | 33.2 c | 40.7 b |
| CA62 | 22.6 c | 42.2 b |  | 52.6 b | 28.8 d |  | 35.4 b | 40.0 c |  | 45.1 a | 31.6 e |  | 38.9 b | 35.7 d |
| CV99 | 26.2 b | 44.0 a |  | 50.4 b | 32.6 c |  | 48.5 a | 35.0 c |  | 40.1 b | 41.1 c |  | 41.3 b | 38.1 c |
| OrV | 20.3 d | 47.7 a |  | 46.3 c | 36.8 c |  | 37.1 b | 38.0 c |  | 35.1 c | 42.9 c |  | 34.7 c | 41.3 b |
| OrA | 13.6 e | 48.5 a |  | 41.1 c | 40.0 b |  | 36.7 b | 41.9 b |  | 33.9 c | 44.8 c |  | 31.3 c | 43.8 a |
| ObV | 8.8 f | 48.5 a |  | 56.4 b | 27.9 d |  | 50.1 a | 30.8 d |  | 18.2 f | 46.7 b |  | 33.4 c | 38.5 c |
| ObA | 12.5 e | 39.2 b |  | 50.8 b | 31.3 d |  | 51.8 a | 28.9 d |  | 25.5 e | 43.5 c |  | 35.2 c | 35.7 d |
| Tupi | 26.0 b | 40.7 b |  | 56.1 b | 25.9 d |  | 27.5 c | 42.1 b |  | 30.5 d | 36.2 d |  | 35.0 c | 36.2 d |
| IAC125 | 31.1 a | 34.4 c |  | 67.7 a | 18.0 e |  | 53.3 a | 28.9 d |  | 45.3 a | 35.1 d |  | 49.4 a | 29.1 e |
| Catiguá | 6.4 f | 29.1 d |  | 13.4 e | 49.4 a |  | 18.7 c | 47.9 a |  | 8.3 h | 47.1 b |  | 11.7 d | 43.4 a |
| Oeiras | 14.5 e | 45.1 a |  | 43.6 c | 35.6 c |  | 33.3 b | 50.0 a |  | 31.0 d | 49.5 a |  | 30.6 c | 45.4 a |
| PBr | 4.9 f | 38.3 b |  | 31.2 d | 39.8 b |  | 27.6 c | 50.6 a |  | 26.5 e | 42.6 c |  | 22.6 d | 43.7 a |
| Sacr | 7.2 f | 41.6 b |  | 33.7 d | 41.0 b |  | 19.1 c | 50.4 a |  | 12.8 g | 49.8 a |  | 18.2 d | 45.7 a |
| IPR99 | 21.4 d | 47.7 a |  | 56.2 b | 26.0 d |  | 50.1 a | 30.8 d |  | 40.2 b | 36.5 d |  | 42.0 b | 35.2 d |
| IPR100 | 24.0 c | 49.7 a |  | 45.2 c | 34.7 c |  | 44.9 a | 34.3 c |  | 18.4 f | 52.4 a |  | 33.1 c | 42.8 b |
| IPR103 | 18.8 d | 48.8 a |  | 46.0 c | 33.9 c |  | 42.0 a | 37.2 c |  | 16.1 f | 46.4 b |  | 30.7 c | 41.6 b |
| Sabiá | 26.1 b | 38.9 b |  | 60.2 b | 22.6 e |  | 50.9 a | 29.7 d |  | 29.7 d | 42.7 c |  | 41.7 b | 33.5 d |
| F | 58.19\*\* | 14.25\*\* |  | 12.27\*\* | 12.73\*\* |  | 5.67\*\* | 10.90\*\* |  | 157.86\*\* | 33.06\*\* |  | 31.16\*\* | 26.53\*\* |
| CV (%) | 11.82 | 7.07 |  | 24.52 | 13.03 |  | 24.00 | 11.65 |  | 3.18 | 4.57 |  | 22.78 | 4.50 |
| Mean | 17.7 | 43.0 |  | 46.9 | 32.8 |  | 39.3 | 38.5 |  | 28.6 | 43.2 |  | 33.1 | 39.4 |

SH3: IAC Catuaí SH3; CA62: Catuaí Amarelo IAC 62; CV99: Catuaí Vermelho IAC 99; OrV: IAC Ouro Verde; OrA: IAC Ouro Amarelo; ObV: Obatã IAC 1669-20; ObA: IAC Obatã 4739; Tupi: Tupi IAC 1669-33; IAC125: IAC 125 RN; Catiguá MG1; Oeiras: Oeiras MG 6851; PBr: Pau-Brasil MG1; Sacr: Sacramento MG1; IPR99: IPR 99; IPR100: IPR 100; IPR103: IPR 103; Sabiá: Sabiá Tardio. Means followed by the same letter do not differ from each other by the Scott-Knott test at the 5% probability level. NS: not significant. \*Significant at 5% probability. \*\*Significant at 1% probability. CV: coefficient of variation

**Supplementary Table 6.** Means of the percentage of retention of flat grains above sieve 13 (S13) and below 13 (Deep)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | S13 | Deep |  | S13 | Deep |  | S13 | Deep |  | S13 | Deep |  | S13 | Deep |
| 1ª Season | |  | 2ª Season | |  | 3ª Season | |  | 4ª Season | |  | Mean | |
| SH3 | 23.3 c | 7.3 d |  | 6.6 b | 2.7 c |  | 9.4 b | 3.7 b |  | 11.4 d | 4.7 c |  | 12.7 c | 4.6 c |
| CA62 | 17.0 d | 5.4 e |  | 4.8 b | 3.1 b |  | 10.5 b | 2.8 b |  | 11.1 d | 4.6 c |  | 10.8 c | 4.0 d |
| CV99 | 15.0 d | 4.6 e |  | 4.0 b | 2.1 c |  | 6.2 b | 2.1 b |  | 7.3 e | 4.3 c |  | 8.1 e | 3.3 d |
| OrV | 17.5 d | 5.0 e |  | 5.7 b | 2.2 c |  | 10.9 b | 3.2 b |  | 8.6 e | 4.3 c |  | 10.7 c | 3.7 d |
| OrA | 22.7 c | 6.9 d |  | 6.3 b | 2.1 c |  | 7.7 b | 3.2 b |  | 11.1 d | 3.4 d |  | 12.0 c | 3.9 d |
| ObV | 30.0 b | 6.5 d |  | 5.2 b | 2.3 c |  | 7.5 b | 3.2 b |  | 18.8 b | 8.0 a |  | 15.4 b | 5.0 c |
| ObA | 30.9 b | 10.1 c |  | 6.3 b | 2.8 c |  | 7.9 b | 3.8 b |  | 14.6 c | 7.8 a |  | 14.9 b | 6.1 b |
| Tupi | 16.4 d | 6.3 d |  | 5.1 b | 3.3 b |  | 14.1 a | 5.2 a |  | 11.9 d | 6.4 b |  | 11.9 c | 5.3 c |
| IAC125 | 19.0 d | 9.7 c |  | 5.6 b | 3.1 b |  | 6.9 b | 3.0 b |  | 8.4 e | 2.9 d |  | 10.0 d | 4.7 c |
| Catiguá | 39.6 a | 16.4 a |  | 16.2 a | 5.6 a |  | 17.9 a | 5.8 a |  | 26.3 a | 8.3 a |  | 25.0 a | 9.0 a |
| Oeiras | 22.2 c | 7.1 d |  | 6.2 b | 2.2 c |  | 10.4 b | 3.1 b |  | 7.6 e | 3.8 d |  | 11.6 c | 4.0 d |
| PBr | 29.6 b | 11.6 b |  | 8.6 b | 3.6 b |  | 9.9 b | 3.9 b |  | 14.2 c | 5.5 c |  | 15.6 b | 6.1 b |
| Sacr | 26.6 b | 11.7 b |  | 8.6 b | 4.0 b |  | 11.5 b | 3.5 b |  | 17.8 b | 6.1 b |  | 16.1 b | 6.3 b |
| IPR99 | 15.4 d | 7.3 d |  | 6.2 b | 2.5 c |  | 8.0 b | 3.1 b |  | 11.0 d | 3.4 d |  | 10.2 d | 4.1 d |
| IPR100 | 16.0 d | 4.5 e |  | 6.7 b | 3.5 b |  | 7.5 b | 3.4 b |  | 15.3 c | 6.3 b |  | 11.4 c | 4.4 c |
| IPR103 | 19.3 d | 5.6 e |  | 6.9 b | 3.2 b |  | 8.5 b | 3.8 b |  | 25.4 a | 6.4 b |  | 15.0 b | 4.7 c |
| Sabiá | 16.9 d | 5.6 e |  | 5.6 b | 3.2 b |  | 6.6 b | 3.3 b |  | 15.9 c | 4.6 c |  | 11.2 c | 4.2 d |
| F | 28.44\*\* | 54.64\*\* |  | 6.14\*\* | 6.86\*\* |  | 3.67\*\* | 2.38\* |  | 17.77\*\* | 17.77\*\* |  | 32.58\*\* | 39.13\*\* |
| CV (%) | 11.80 | 11.17 |  | 12.38 | 22.17 |  | 32.79 | 31.25 |  | 12.09 | 17.56 |  | 10.97 | 9.01 |
| Mean | 22.2 | 7.7 |  | 6.7 | 3.0 |  | 9.5 | 3.5 |  | 13.9 | 5.3 |  | 10.3 | 4.9 |

SH3: IAC Catuaí SH3; CA62: Catuaí Amarelo IAC 62; CV99: Catuaí Vermelho IAC 99; OrV: IAC Ouro Verde; OrA: IAC Ouro Amarelo; ObV: Obatã IAC 1669-20; ObA: IAC Obatã 4739; Tupi: Tupi IAC 1669-33; IAC125: IAC 125 RN; Catiguá MG1; Oeiras: Oeiras MG 6851; PBr: Pau-Brasil MG1; Sacr: Sacramento MG1; IPR99: IPR 99; IPR100: IPR 100; IPR103: IPR 103; Sabiá: Sabiá Tardio. Means followed by the same letter do not differ from each other by the Scott-Knott test at the 5% probability level. NS: not significant. \*Significant at 5% probability. \*\*Significant at 1% probability. CV: coefficient of variation

**Supplementary Table 7.** Percentage of peaberry and grain defects (BIS) of Arabica coffee cultivars

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | Peaberry | BIS |  | Peaberry | BIS |  | Peaberry | BIS |  | Peaberry | BIS |  | Peaberry | BIS |
| 1ª Season | |  | 2ª Season | |  | 3ª Season | |  | 4ª Season | |  | Mean | |
| SH3 | 7.2 e | 5.5 c |  | 11.6 b | 6.5 a |  | 9.1 c | 10.8 d |  | 7.4 e | 7.4 f |  | 8.8 c | 7.5 d |
| CA62 | 12.8 b | 11.6 b |  | 10.6 c | 1.9 g |  | 11.4 b | 8.6 d |  | 7.7 e | 12.5 b |  | 10.6 b | 8.6 c |
| CV99 | 10.3 c | 8.8 c |  | 10.9 c | 3.8 d |  | 8.2 c | 9.7 d |  | 7.3 e | 9.6 d |  | 9.2 c | 8.0 d |
| OrV | 9.4 d | 8.1 c |  | 9.1 c | 4.7 c |  | 10.8 b | 11.9 c |  | 9.2 d | 5.5 g |  | 9.6 c | 7.5 d |
| OrA | 8.2 d | 7.2 c |  | 10.6 c | 2.7 f |  | 10.4 b | 9.4 d |  | 6.8 e | 9.4 d |  | 9.0 c | 7.2 d |
| ObV | 6.1 f | 10.8 b |  | 8.1 c | 3.3 e |  | 8.4 c | 14.2 b |  | 8.3 d | 8.4 e |  | 7.7 d | 9.2 c |
| ObA | 7.3 e | 17.7 a |  | 8.8 c | 3.9 d |  | 7.5 c | 13.7 b |  | 8.6 d | 8.4 e |  | 8.1 d | 10.9 b |
| Tupi | 10.6 c | 7.9 c |  | 9.6 c | 4.7 c |  | 11.1 b | 5.1 f |  | 15.0 a | 6.1 g |  | 11.6 b | 5.9 e |
| IAC125 | 5.7 f | 6.9 c |  | 5.6 c | 3.6 d |  | 7.9 c | 9.4 d |  | 11.1 c | 4.1 h |  | 7.6 d | 6.0 e |
| Catiguá | 8.5 d | 15.4 a |  | 12.7 b | 5.6 b |  | 9.8 b | 6.8 e |  | 10.0 d | 5.4 g |  | 10.2 b | 8.3 c |
| Oeiras | 11.1 c | 8.8 c |  | 12.4 b | 4.5 c |  | 8.0 c | 5.4 f |  | 8.2 e | 5.6 g |  | 9.9 c | 6.1 e |
| PBr | 15.7 a | 6.4 c |  | 14.1 a | 3.8 d |  | 13.0 a | 7.5 e |  | 11.3 c | 10.7 c |  | 13.0 a | 7.1 d |
| Sacr | 12.9 b | 12.2 b |  | 15.3 a | 5.2 b |  | 15.5 a | 5.7 f |  | 13.5 b | 9.4 d |  | 13.8 a | 8.1 c |
| IPR99 | 8.3 d | 12.1 b |  | 9.1 c | 3.2 e |  | 8.0 c | 7.2 e |  | 8.8 d | 7.3 f |  | 8.5 d | 7.5 d |
| IPR100 | 5.8 f | 6.9 c |  | 9.8 c | 3.0 e |  | 9.9 b | 15.8 a |  | 7.6 e | 10.0 d |  | 8.3 d | 8.9 c |
| IPR103 | 7.5 e | 7.0 c |  | 10.0 c | 6.9 a |  | 8.5 c | 9.7 d |  | 7.8 e | 31.0 a |  | 8.5 d | 13.6 a |
| Sabiá | 12.5 b | 6.3 c |  | 8.5 c | 5.1 b |  | 9.6 b | 4.9 f |  | 7.2 e | 5.4 g |  | 9.4 c | 5.4 e |
| F | 30.89\*\* | 6.31\*\* |  | 5.71\*\* | 53.58\*\* |  | 4.32\*\* | 64.36\*\* |  | 22.51\*\* | 349.72\*\* |  | 18.80\*\* | 27.42\*\* |
| CV (%) | 6.45 | 18.19 |  | 17.77 | 8.53 |  | 3.53 | 5.42 |  | 10.66 | 7.05 |  | 2.01 | 9.53 |
| Mean | 9.4 | 9.39 |  | 10.4 | 4.26 |  | 9.8 | 9.15 |  | 9.2 | 9.18 |  | 9.6 | 7.99 |

SH3: IAC Catuaí SH3; CA62: Catuaí Amarelo IAC 62; CV99: Catuaí Vermelho IAC 99; OrV: IAC Ouro Verde; OrA: IAC Ouro Amarelo; ObV: Obatã IAC 1669-20; ObA: IAC Obatã 4739; Tupi: Tupi IAC 1669-33; IAC125: IAC 125 RN; Catiguá MG1; Oeiras: Oeiras MG 6851; PBr: Pau-Brasil MG1; Sacr: Sacramento MG1; IPR99: IPR 99; IPR100: IPR 100; IPR103: IPR 103; Sabiá: Sabiá Tardio. Means followed by the same letter do not differ from each other by the Scott-Knott test at the 5% probability level. NS: not significant. \*Significant at 5% probability. \*\*Significant at 1% probability. CV: coefficient of variation