

Genotype imputation strategies for Portuguese Holstein cattle using different SNP panels

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Table S1. Spearman's correlation coefficients by chromosomes for SNP-specific imputation accuracy for all scenarios evaluated (values are means + standard deviations)

Chromosome	S1	S2	S3	S4	S5	S6	S7
1	0.90 (0.14)	0.91 (0.17)	0.91 (0.16)	0.95 (0.11)	0.96 (0.09)	0.95 (0.12)	0.86 (0.13)
2	0.92 (0.11)	0.92 (0.16)	0.93 (0.13)	0.96 (0.10)	0.95 (0.11)	0.96 (0.11)	0.87 (0.11)
3	0.93 (0.09)	0.92 (0.12)	0.93 (0.09)	0.97 (0.06)	0.96 (0.09)	0.95 (0.11)	0.87 (0.10)
4	0.92 (0.09)	0.93 (0.11)	0.95 (0.09)	0.96 (0.09)	0.95 (0.10)	0.96 (0.08)	0.88 (0.10)
5	0.93 (0.09)	0.93 (0.13)	0.94 (0.13)	0.96 (0.10)	0.96 (0.09)	0.95 (0.11)	0.88 (0.10)
6	0.92 (0.11)	0.93 (0.15)	0.95 (0.10)	0.97 (0.08)	0.96 (0.14)	0.97 (0.08)	0.86 (0.11)
7	0.90 (0.12)	0.90 (0.13)	0.92 (0.11)	0.95 (0.09)	0.92 (0.12)	0.95 (0.10)	0.87 (0.11)
8	0.92 (0.11)	0.92 (0.12)	0.94 (0.10)	0.95 (0.10)	0.95 (0.09)	0.95 (0.11)	0.89 (0.09)
9	0.91 (0.11)	0.90 (0.20)	0.91 (0.17)	0.96 (0.12)	0.95 (0.13)	0.94 (0.14)	0.87 (0.09)
10	0.92 (0.11)	0.94 (0.10)	0.96 (0.06)	0.97 (0.07)	0.96 (0.11)	0.97 (0.06)	0.87 (0.12)
11	0.93 (0.11)	0.92 (0.12)	0.95 (0.09)	0.97 (0.07)	0.95 (0.10)	0.96 (0.08)	0.89 (0.10)
12	0.91 (0.11)	0.94 (0.09)	0.94 (0.11)	0.95 (0.09)	0.95 (0.09)	0.95 (0.10)	0.87 (0.08)
13	0.90 (0.10)	0.93 (0.14)	0.94 (0.08)	0.96 (0.08)	0.94 (0.12)	0.96 (0.08)	0.88 (0.09)
14	0.91 (0.12)	0.92 (0.12)	0.93 (0.10)	0.96 (0.09)	0.95 (0.09)	0.95 (0.13)	0.87 (0.10)
15	0.93 (0.09)	0.93 (0.11)	0.93 (0.12)	0.97 (0.08)	0.95 (0.09)	0.97 (0.07)	0.87 (0.10)
16	0.93 (0.11)	0.93 (0.12)	0.94 (0.12)	0.96 (0.10)	0.95 (0.10)	0.95 (0.12)	0.87 (0.11)
17	0.90 (0.10)	0.91 (0.13)	0.91 (0.13)	0.95 (0.08)	0.93 (0.13)	0.95 (0.11)	0.86 (0.10)
18	0.90 (0.10)	0.92 (0.10)	0.94 (0.11)	0.96 (0.07)	0.96 (0.08)	0.95 (0.10)	0.87 (0.07)
19	0.91 (0.10)	0.90 (0.19)	0.91 (0.17)	0.95 (0.11)	0.93 (0.15)	0.95 (0.12)	0.85 (0.11)
20	0.93 (0.08)	0.92 (0.12)	0.94 (0.08)	0.96 (0.07)	0.94 (0.09)	0.95 (0.09)	0.89 (0.08)
21	0.88 (0.15)	0.94 (0.08)	0.92 (0.11)	0.95 (0.08)	0.94 (0.13)	0.95 (0.12)	0.84 (0.14)
22	0.90 (0.10)	0.91 (0.17)	0.94 (0.07)	0.96 (0.07)	0.95 (0.07)	0.96 (0.06)	0.85 (0.08)
23	0.90 (0.10)	0.88 (0.21)	0.91 (0.16)	0.94 (0.11)	0.92 (0.15)	0.95 (0.11)	0.86 (0.09)
24	0.91 (0.10)	0.93 (0.09)	0.93 (0.07)	0.96 (0.08)	0.94 (0.10)	0.96 (0.09)	0.87 (0.08)
25	0.91 (0.09)	0.95 (0.06)	0.94 (0.05)	0.97 (0.05)	0.97 (0.07)	0.97 (0.05)	0.86 (0.08)
26	0.88 (0.15)	0.93 (0.12)	0.93 (0.08)	0.95 (0.10)	0.93 (0.15)	0.93 (0.14)	0.85 (0.14)
27	0.92 (0.08)	0.94 (0.09)	0.96 (0.05)	0.97 (0.06)	0.94 (0.10)	0.97 (0.06)	0.85 (0.08)
28	0.91 (0.08)	0.93 (0.09)	0.95 (0.07)	0.96 (0.07)	0.95 (0.10)	0.97 (0.07)	0.85 (0.09)
29	0.88 (0.11)	0.91 (0.14)	0.93 (0.12)	0.95 (0.09)	0.94 (0.09)	0.95 (0.13)	0.85 (0.10)

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Table S2. Concordance rate by chromosomes (Chr) for SNP-specific imputation accuracy for all scenarios evaluated (values are means + standard deviations)

Chromosome	S1	S2	S3	S4	S5	S6	S7
1	95.16 (6.88)	96.67 (6.86)	96.35 (7.99)	97.80 (5.19)	98.29 (3.69)	97.57 (5.96)	92.52 (7.11)
2	96.22 (4.62)	97.50 (5.33)	97.26 (5.45)	98.37 (3.55)	98.36 (3.06)	97.94 (4.54)	92.96 (6.14)
3	96.02 (4.17)	97.01 (2.85)	97.06 (2.93)	98.48 (2.17)	98.42 (2.50)	98.01 (4.40)	92.37 (6.63)
4	95.62 (4.25)	96.77 (3.85)	97.47 (3.14)	97.94 (3.78)	97.89 (4.24)	97.93 (3.76)	93.20 (5.93)
5	96.37 (4.32)	97.05 (7.08)	96.91 (7.28)	98.35 (4.28)	98.12 (4.40)	97.38 (6.10)	93.31 (5.28)
6	95.77 (4.70)	97.37 (5.96)	97.36 (6.12)	98.34 (3.42)	98.19 (5.60)	98.50 (3.15)	92.20 (5.64)
7	94.75 (5.50)	97.15 (3.10)	97.10 (3.38)	97.72 (3.74)	98.04 (2.71)	97.66 (3.47)	92.79 (7.01)
8	95.53 (5.42)	97.20 (4.42)	97.83 (3.04)	97.68 (4.20)	98.32 (2.81)	97.60 (5.15)	93.87 (4.63)
9	95.35 (5.23)	97.09 (5.63)	96.91 (7.13)	98.18 (4.74)	98.55 (2.60)	97.61 (5.98)	93.04 (4.90)
10	96.24 (4.73)	97.73 (3.36)	97.73 (2.49)	98.66 (2.57)	98.65 (3.99)	98.22 (2.94)	92.92 (6.09)
11	96.41 (4.73)	97.94 (2.64)	98.35 (1.98)	98.55 (2.52)	98.42 (3.00)	98.24 (3.81)	93.65 (5.14)
12	94.99 (5.10)	97.53 (2.78)	96.82 (6.35)	98.00 (3.11)	98.20 (2.84)	97.86 (4.46)	92.38 (5.73)
13	94.34 (4.74)	97.51 (2.97)	97.50 (2.65)	97.86 (3.23)	98.10 (2.73)	97.75 (3.42)	92.71 (5.40)
14	95.34 (5.72)	97.57 (3.13)	97.40 (3.21)	97.75 (4.66)	98.24 (2.91)	97.79 (6.32)	92.42 (5.43)
15	96.00 (4.18)	97.48 (2.77)	97.33 (2.43)	98.65 (2.01)	98.27 (2.56)	98.72 (1.84)	92.28 (6.05)
16	96.06 (4.86)	98.00 (2.98)	98.10 (2.85)	98.31 (3.45)	98.29 (2.73)	97.95 (5.30)	93.15 (5.89)
17	94.89 (4.57)	96.95 (3.76)	96.83 (2.90)	97.99 (2.65)	97.74 (4.84)	97.30 (5.82)	92.16 (4.81)
18	94.57 (4.63)	96.35 (4.38)	96.64 (4.03)	98.03 (2.84)	98.24 (3.07)	97.65 (3.82)	92.34 (5.28)
19	95.09 (4.70)	96.25 (7.79)	96.00 (8.04)	97.88 (4.36)	97.47 (5.89)	97.56 (3.42)	90.79 (7.11)
20	96.17 (3.31)	97.94 (2.09)	98.23 (1.85)	98.23 (2.24)	98.15 (2.49)	98.22 (2.36)	94.26 (3.67)
21	93.90 (7.17)	97.92 (2.23)	97.42 (2.38)	97.77 (3.86)	97.82 (5.32)	97.26 (6.08)	91.00 (8.08)
22	94.63 (4.67)	96.69 (3.60)	96.98 (3.78)	98.12 (3.09)	97.94 (3.04)	98.14 (2.46)	92.13 (4.64)
23	94.88 (3.72)	97.12 (2.83)	97.35 (2.84)	97.63 (2.60)	97.83 (2.37)	97.92 (2.22)	91.82 (5.27)
24	95.34 (5.03)	96.89 (4.06)	96.88 (3.66)	98.06 (4.94)	98.19 (2.73)	97.71 (6.54)	92.89 (4.29)
25	94.94 (3.78)	97.37 (2.40)	96.69 (3.75)	98.19 (2.60)	98.85 (1.64)	98.05 (2.62)	91.76 (4.53)
26	94.06 (7.27)	97.33 (3.67)	97.32 (2.88)	97.88 (3.70)	97.59 (4.32)	97.32 (4.48)	92.09 (7.98)
27	95.57 (3.53)	98.15 (2.47)	98.04 (2.57)	98.43 (2.22)	98.48 (2.23)	98.49 (1.83)	91.30 (5.11)
28	94.80 (4.11)	96.94 (3.35)	97.29 (3.08)	98.14 (2.83)	97.73 (3.47)	98.45 (2.04)	91.27 (5.25)
29	93.31 (6.87)	95.78 (8.99)	95.61 (8.86)	97.57 (4.72)	97.72 (3.07)	97.37 (6.42)	90.97 (7.05)