

Supplementary Materials

Table S1. Morphological descriptors and analysis. Quantitative and qualitative seed morphological parameters measured for each common bean population. Data represent the mean ($n = 10$) \pm standard error. CV: Ciliegino; SMR: San Michele Rosso; MO: Monachella; MA: Mascherino; PI: Pinto; TR: Tuvagliedda Rossa; SA: Suocera e Nuora.

| Population name | Source | 100 seed weight (g) | 100 seed volume (mL) | 100 seed density (g·mL ⁻¹) | Total area (mm ²) | Perimeter (mm) | Roundness | Major axis lenght (mm) | Minor axis lenght (mm) | Dark coloured seed area (mm ²) | Light coloured seed area (mm ²) | Number of seed coat colours | Main seed coat colour | Predominant secondary seed coat colour | Seed shape | Seed coat pattern |
|-----------------|---|---------------------|----------------------|--|-------------------------------|------------------|-----------------|------------------------|------------------------|--|---|-----------------------------|-----------------------|--|------------|-------------------|
| CV | Vastogirardi (Molise) 41° 46' 9.651" (N) 14° 15' 28.894" (E) | 32.17 \pm 1.75 | 51.33 \pm 5.93 | 0.64 \pm 0.05 | 60.40 \pm 3.84 | 30.32 \pm 0.90 | 6.32 \pm 0.27 | 10.37 \pm 0.30 | 7.02 \pm 0.29 | 60.40 \pm 3.84 | 0 \pm 0 | one | red | none | oval | absent |
| SMR | Sarconi (Basilicata) 40° 14' 38.04" (N) 15° 51' 55.439" (E) | 39.90 \pm 2.02 | 72.00 \pm 3.46 | 0.55 \pm 0.00 | 55.15 \pm 2.64 | 28.15 \pm 0.62 | 7.68 \pm 0.21 | 9.64 \pm 0.30 | 7.40 \pm 0.28 | 55.15 \pm 2.64 | 0 \pm 0 | one | red | none | oval | absent |
| MO | Vastogirardi (Molise) 41° 46' 50.074" (N) 14° 17' 44.116" (E) | 51.57 \pm 3.09 | 80.00 \pm 3.06 | 0.64 \pm 0.02 | 67.75 \pm 1.67 | 31.47 \pm 0.39 | 7.96 \pm 0.31 | 10.42 \pm 0.35 | 8.44 \pm 0.22 | 48.88 \pm 2.38 | 43.15 \pm 3.43 | two | dark | white | round | bicolor |
| MA | Piazza al Serchio (Tuscany) 44° 10' 26.828" (N) 10° 18' 42.901" (E) | 60.20 \pm 1.99 | 92.67 \pm 1.76 | 0.65 \pm 0.01 | 94.48 \pm 3.37 | 37.19 \pm 0.67 | 7.29 \pm 0.25 | 12.47 \pm 0.24 | 9.39 \pm 0.22 | 48.11 \pm 4.78 | 46.82 \pm 3.04 | two | dark | white | oval | bicolor |
| PI | Agnone (Molise) 41° 51' 1.076" (N) 14° 20' 45.679" (E) | 57.90 \pm 2.68 | 92.67 \pm 3.53 | 0.62 \pm 0.01 | 82.36 \pm 3.88 | 34.63 \pm 0.82 | 7.21 \pm 0.23 | 12.38 \pm 0.40 | 9.14 \pm 0.31 | 21.02 \pm 3.41 | 60.91 \pm 5.68 | two | white | dark | oval | bicolor |
| TR | Sarconi (Basilicata) 40° 14' 38.04" (N) 15° 51' 55.439" (E) | 57.67 \pm 0.22 | 86.67 \pm 0.67 | 0.67 \pm 0.01 | 81.94 \pm 2.74 | 33.94 \pm 0.55 | 7.92 \pm 0.19 | 11.72 \pm 0.35 | 9.56 \pm 0.18 | 42.46 \pm 3.42 | 40.79 \pm 3.02 | more than two | dark | white | oval | spotted bicolor |
| SA | Sant' Angelo del Pesco (Molise) 41° 54' 18.619" (N) 14° 16' 49.367" (E) | 39.97 \pm 1.36 | 77.33 \pm 2.40 | 0.52 \pm 0.01 | 81.06 \pm 4.93 | 33.91 \pm 0.93 | 7.63 \pm 0.23 | 11.95 \pm 0.41 | 8.98 \pm 0.26 | 42.71 \pm 4.13 | 32.24 \pm 2.45 | two | dark | white | oval | bicolor |

Table S3. Primers used for ISSR analysis and their respective markers performance indexes. The ISSR primer name, 5’-3’ sequence (reported in Marotti et al. [2] and Pena-Ortega et al. [28]), and annealing temperature are listed together with their performance indexes: Number of Total Bands (NTB), Number of Monomorphic Bands (NMB), Number of Polymorphic Bands (NPB), Percentage of Polymorphic Bands (%P), Resolving Power (RP) and Polymorphism Information Content (PIC).

| Primer name | Nucleotide sequence 5' -> 3' | Annealing temperature | NTB | NMB | NPB | %P | RP | PIC |
|-------------|---------------------------------|--------------------------|-----|-----|-----|--------|------|------|
| LOL2 | (CT) ₈ GC | 37 °C | 8 | 4 | 4 | 50.00 | 2.57 | 0.22 |
| LOL7 | (GAGA) ₃ CC | 34 °C | 7 | 3 | 4 | 57.14 | 2.29 | 0.24 |
| LOL8 | (GT) ₆ CC | 34 °C | 7 | 6 | 1 | 14.29 | 0.29 | 0.03 |
| LOL9 | (CAC) ₃ GC | 34 °C | 8 | 3 | 5 | 62.50 | 3.09 | 0.26 |
| LOL10 | (GAG) ₃ GC | 34 °C | 6 | 1 | 5 | 83.33 | 2.63 | 0.32 |
| LOL12 | (GTG) ₃ GC | 34 °C | 8 | 0 | 8 | 100.00 | 5.60 | 0.44 |
| PHV06 | CCA(CT) ₈ | 37 °C | 4 | 4 | 0 | 0.00 | 0.34 | 0.08 |
| PHV07 | GTG(GT) ₈ | 38 °C | 4 | 2 | 2 | 50.00 | 1.03 | 0.20 |

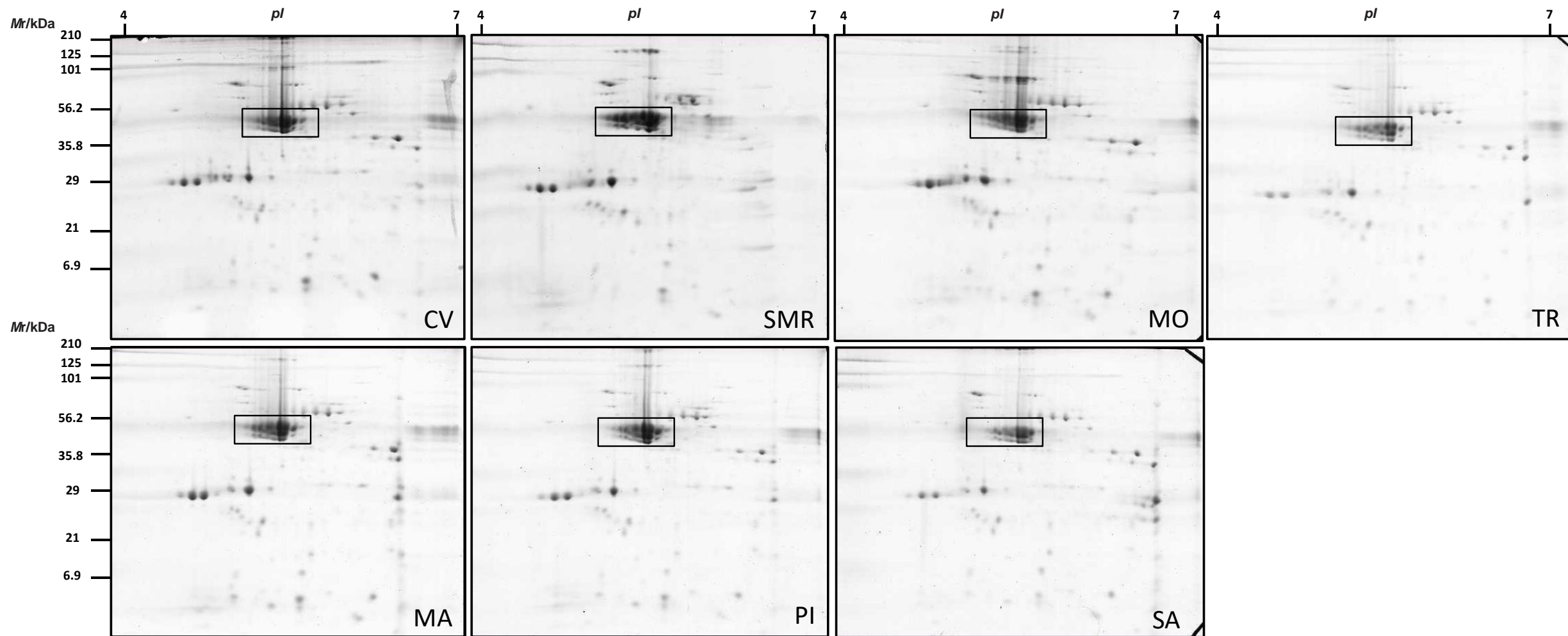


Figure S1. 2-DE profiles of common bean landraces. 2-DE was performed using 50 µg of total protein loaded on 7-cm long IPG strips, pH=4–7, and 15% (by mass) polyacrylamide gels. Gel regions containing phaseolin spots are enclosed in rectangles. CV: Ciliegino; SMR: San Michele Rosso; MO: Monachella; MA: Mascherino; PI: Pinto; TR: Tuvagliedda Rossa; SA: Suocera e Nuora.

Molise Region



Ciliegino - CV
Vastogirardi (IS)



Monachella - MO
Vastogirardi (IS)



Pinto - PI
Agnone (IS)



Suocera e Nuora - SA
Sant'Angelo del Pesco (IS)

Basilicata Region



San Michele Rosso - SMR
Sarconi (PZ)



Tuvagliedda Rossa - TR
Sarconi (PZ)

Tuscany Region



Mascherino - MA
Piazza al Serchio (LU)

Figure S2. Autochthonous Italian Common bean seed accessions. Seed of the seven *Phaseolus vulgaris* L. landraces analyzed in the present study and cultivated in the Molise region (Italy) and in other two Italian Apennine regions (Tuscany and Basilicata – Italy).