**Supplementary Table S1:** List of 328 grain samples used in the study along with the crop species, genotype ID and protein content (%, [g.100g-1]) obtained from laboratory analysis.

|  |  |  |  |
| --- | --- | --- | --- |
| **S. no** | **Crop species** | **Genotype** | **Protein (%, [g.100g-1])** |
| 1 | Finger millet | IE 2043 | 7.21 |
| 2 | Finger millet | IE 2296 | 7.65 |
| 3 | Finger millet | IE 2572 | 7.37 |
| 4 | Finger millet | IE 2606 | 9.59 |
| 5 | Finger millet | IE 2790 | 6.76 |
| 6 | Finger millet | IE 3077 | 6.76 |
| 7 | Finger millet | IE 3470 | 7.61 |
| 8 | Finger millet | IE 3475 | 7.54 |
| 9 | Finger millet | IE 3614 | 5.99 |
| 10 | Finger millet | IE 3618 | 7.58 |
| 11 | Finger millet | IE 4057 | 8.01 |
| 12 | Finger millet | IE 4073 | 7.39 |
| 13 | Finger millet | IE 4115 | 7.55 |
| 14 | Finger millet | IE 4121 | 8.78 |
| 15 | Finger millet | IE 4671 | 9.07 |
| 16 | Finger millet | IE 5066 | 9.50 |
| 17 | Finger millet | IE 5106 | 8.88 |
| 18 | Finger millet | IE 5165 | 8.65 |
| 19 | Finger millet | IE 518 | 7.62 |
| 20 | Finger millet | IE 5367 | 9.00 |
| 21 | Foxtail millet | ISe 1251 | 10.96 |
| 22 | Foxtail millet | ISe 1454 | 11.08 |
| 23 | Foxtail millet | ISe 1468 | 9.08 |
| 24 | Foxtail millet | ISe 1511 | 11.13 |
| 25 | Foxtail millet | ISe 1664 | 12.39 |
| 26 | Foxtail millet | ISe 1805 | 12.45 |
| 27 | Foxtail millet | ISe 1881 | 12.66 |
| 28 | Foxtail millet | ISe 1892 | 12.91 |
| 29 | Foxtail millet | ISe 238 | 11.92 |
| 30 | Foxtail millet | ISe 289 | 10.39 |
| 31 | Foxtail millet | ISe 480 | 10.86 |
| 32 | Foxtail millet | ISe 525 | 10.52 |
| 33 | Foxtail millet | ISe 719 | 11.89 |
| 34 | Foxtail millet | ISe 783 | 13.42 |
| 35 | Foxtail millet | ISe 796 | 11.65 |
| 36 | Foxtail millet | ISe 827 | 13.17 |
| 37 | Foxtail millet | ISe 828 | 11.40 |
| 38 | Foxtail millet | ISe 840 | 9.89 |
| 39 | Foxtail millet | ISe 869 | 10.82 |
| 40 | Maize | 783527 | 9.34 |
| 41 | Maize | 4695575 | 9.97 |
| 42 | Maize | 9424780 | 9.62 |
| 43 | Maize | 18270413 | 9.04 |
| 44 | Maize | 22525674 | 9.10 |
| 45 | Maize | 900MG | 8.98 |
| 46 | Maize | X35D602 | 8.76 |
| 47 | Maize | X35D612 | 8.53 |
| 48 | Maize | X35D620 | 8.81 |
| 49 | Maize | X35F833 | 9.21 |
| 50 | Pearl millet | 9444 | 12.53 |
| 51 | Pearl millet | PUSA 322 | 9.69 |
| 52 | Pearl millet | 86 M 86 | 14.41 |
| 53 | Pearl millet | 86 M 88 | 11.42 |
| 54 | Pearl millet | 863B | 11.65 |
| 55 | Pearl millet | 863B-P2 | 15.19 |
| 56 | Pearl millet | APH 45 | 10.45 |
| 57 | Pearl millet | Bio 451 | 10.29 |
| 58 | Pearl millet | Bio 549 | 10.61 |
| 59 | Pearl millet | BLMPH 105 | 10.16 |
| 60 | Pearl millet | GB8735 | 10.87 |
| 61 | Pearl millet | ICMV 93191 | 16.12 |
| 62 | Pearl millet | GK 1183 | 11.75 |
| 63 | Pearl millet | GK 1207 | 10.41 |
| 64 | Pearl millet | GK 1235 | 11.02 |
| 65 | Pearl millet | H77/833-2 | 9.76 |
| 66 | Pearl millet | HT 416628 | 12.31 |
| 67 | Pearl millet | HYMH 5 | 12.67 |
| 68 | Pearl millet | HYMH 8 | 12.24 |
| 69 | Pearl millet | ICMB 89111-P6 | 15.00 |
| 70 | Pearl millet | ICMB 90111-P2 | 15.54 |
| 71 | Pearl millet | ICMB 90111-P6 | 13.45 |
| 72 | Pearl millet | ICML 22 | 14.72 |
| 73 | Pearl millet | ICMP 451-P6 | 15.72 |
| 74 | Pearl millet | ICMP 451-P8 | 14.97 |
| 75 | Pearl millet | ICMS 7703 | 21.51 |
| 76 | Pearl millet | ICMS 7704 | 19.84 |
| 77 | Pearl millet | ICMV 155 | 15.05 |
| 78 | Pearl millet | ICMV 221 | 19.04 |
| 79 | Pearl millet | ICMV-IS 92222 | 21.16 |
| 80 | Pearl millet | IP 10085 | 18.74 |
| 81 | Pearl millet | IP 10394 | 15.42 |
| 82 | Pearl millet | IP 10446 | 16.11 |
| 83 | Pearl millet | IP 10539 | 15.33 |
| 84 | Pearl millet | IP 10705 | 16.08 |
| 85 | Pearl millet | IP 10761 | 14.73 |
| 86 | Pearl millet | IP 10811 | 15.94 |
| 87 | Pearl millet | IP 10953 | 13.54 |
| 88 | Pearl millet | IP 11211 | 17.96 |
| 89 | Pearl millet | IP 11275 | 16.95 |
| 90 | Pearl millet | IP 11577 | 19.20 |
| 91 | Pearl millet | IP 12116 | 15.82 |
| 92 | Pearl millet | IP 12322 | 19.77 |
| 93 | Pearl millet | IP 12840 | 18.46 |
| 94 | Pearl millet | IP 13384 | 16.13 |
| 95 | Pearl millet | IP 13964 | 18.86 |
| 96 | Pearl millet | IP 15551 | 16.91 |
| 97 | Pearl millet | IP 15946 | 18.04 |
| 98 | Pearl millet | IP 16082 | 16.09 |
| 99 | Pearl millet | IP 16096 | 17.03 |
| 100 | Pearl millet | IP 16403 | 18.14 |
| 101 | Pearl millet | IP 17611 | 16.02 |
| 102 | Pearl millet | IP 17632 | 13.49 |
| 103 | Pearl millet | IP 17720 | 18.00 |
| 104 | Pearl millet | IP 18062 | 17.19 |
| 105 | Pearl millet | IP 18132 | 16.65 |
| 106 | Pearl millet | IP 18168 | 17.32 |
| 107 | Pearl millet | IP 18293-P152 | 18.50 |
| 108 | Pearl millet | IP 19386 | 15.97 |
| 109 | Pearl millet | IP 19388 | 16.25 |
| 110 | Pearl millet | IP 19405 | 14.59 |
| 111 | Pearl millet | IP 19448 | 16.89 |
| 112 | Pearl millet | IP 21517 | 15.34 |
| 113 | Pearl millet | IP 22423 | 14.79 |
| 114 | Pearl millet | IP 22424 | 14.57 |
| 115 | Pearl millet | IP 22455 | 17.43 |
| 116 | Pearl millet | IP 3108 | 18.05 |
| 117 | Pearl millet | IP 3125 | 14.12 |
| 118 | Pearl millet | IP 3175 | 17.14 |
| 119 | Pearl millet | IP 3509 | 17.44 |
| 120 | Pearl millet | IP 3616 | 16.10 |
| 121 | Pearl millet | IP 3732 | 17.46 |
| 122 | Pearl millet | IP 4020 | 21.46 |
| 123 | Pearl millet | IP 4927 | 18.72 |
| 124 | Pearl millet | IP 4979 | 14.92 |
| 125 | Pearl millet | IP 5207 | 19.00 |
| 126 | Pearl millet | IP 5253 | 12.76 |
| 127 | Pearl millet | IP 5713 | 16.18 |
| 128 | Pearl millet | IP 5923 | 17.39 |
| 129 | Pearl millet | IP 6060 | 17.51 |
| 130 | Pearl millet | IP 6102 | 18.34 |
| 131 | Pearl millet | IP 6110 | 19.48 |
| 132 | Pearl millet | IP 6112 | 16.76 |
| 133 | Pearl millet | IP 6146 | 18.34 |
| 134 | Pearl millet | IP 6179 | 17.86 |
| 135 | Pearl millet | IP 6310 | 16.99 |
| 136 | Pearl millet | IP 6460 | 18.65 |
| 137 | Pearl millet | IP 6682 | 16.39 |
| 138 | Pearl millet | IP 6769 | 16.41 |
| 139 | Pearl millet | IP 6891 | 20.14 |
| 140 | Pearl millet | IP 7470 | 16.50 |
| 141 | Pearl millet | IP 7633 | 16.91 |
| 142 | Pearl millet | IP 7762 | 16.45 |
| 143 | Pearl millet | IP 7941 | 16.51 |
| 144 | Pearl millet | IP 7970 | 15.79 |
| 145 | Pearl millet | IP 8129 | 17.50 |
| 146 | Pearl millet | IP 8166 | 14.77 |
| 147 | Pearl millet | IP 8198 | 16.09 |
| 148 | Pearl millet | IP 8210 | 15.88 |
| 149 | Pearl millet | IP 8276 | 15.37 |
| 150 | Pearl millet | IP 8426 | 17.13 |
| 151 | Pearl millet | IP 8761 | 19.07 |
| 152 | Pearl millet | IP 8767 | 17.37 |
| 153 | Pearl millet | IP 8786 | 19.55 |
| 154 | Pearl millet | IP 8972 | 16.53 |
| 155 | Pearl millet | IP 9282 | 17.34 |
| 156 | Pearl millet | IP 9347 | 17.27 |
| 157 | Pearl millet | IP 9407 | 19.43 |
| 158 | Pearl millet | IP 9426 | 20.31 |
| 159 | Pearl millet | IP 9446 | 15.57 |
| 160 | Pearl millet | IP 9651 | 15.56 |
| 161 | Pearl millet | IP 9692 | 17.98 |
| 162 | Pearl millet | IP 9710 | 15.67 |
| 163 | Pearl millet | IP 9840 | 16.63 |
| 164 | Pearl millet | IP 9854 | 15.93 |
| 165 | Pearl millet | J 104 | 19.42 |
| 166 | Pearl millet | JKBH 1352 | 9.72 |
| 167 | Pearl millet | JKBH 1490 | 13.44 |
| 168 | Pearl millet | KH 3022 | 11.19 |
| 169 | Pearl millet | NBH 5863 | 10.48 |
| 170 | Pearl millet | NU 399 | 10.62 |
| 171 | Pearl millet | NU 409 | 10.65 |
| 172 | Pearl millet | PRLT | 10.09 |
| 173 | Pearl millet | Super Boss | 11.91 |
| 174 | Pearl millet | Tift 383 | 15.97 |
| 175 | Sorghum | Keninkeni | 10.62 |
| 176 | Sorghum | 00-CZ-F5P-135 | 12.55 |
| 177 | Sorghum | 01-BE-F5P-15 | 12.07 |
| 178 | Sorghum | 02-SB-F4DT-275 | 13.09 |
| 179 | Sorghum | 296B | 10.48 |
| 180 | Sorghum | 98-BE-F5P-84 | 11.67 |
| 181 | Sorghum | AKSV BR (PKV KRANTI) | 11.73 |
| 182 | Sorghum | B2-3 | 9.04 |
| 183 | Sorghum | B2-5 | 10.69 |
| 184 | Sorghum | B35 | 11.07 |
| 185 | Sorghum | BJV44 | 9.61 |
| 186 | Sorghum | BTx623 | 10.62 |
| 187 | Sorghum | C41-28-49-11(D3) | 12.67 |
| 188 | Sorghum | C41-28-49-14(D1) | 11.18 |
| 189 | Sorghum | C41-28-49-18-7 | 16.55 |
| 190 | Sorghum | C41-28-49-18-9 | 13.10 |
| 191 | Sorghum | C41-28-49-27-1 | 13.67 |
| 192 | Sorghum | C41-28-52-13-5 | 11.50 |
| 193 | Sorghum | C41-28-52-18(D3) | 10.98 |
| 194 | Sorghum | C41-28-52-26-1 | 12.93 |
| 195 | Sorghum | C41-28-52-28-2 | 12.28 |
| 196 | Sorghum | C41-28-52-28-3 | 12.21 |
| 197 | Sorghum | C41-28-52-28-5 | 12.20 |
| 198 | Sorghum | C41-28-75-21(D1) | 13.32 |
| 199 | Sorghum | C41-28-75-26-4 | 12.08 |
| 200 | Sorghum | CIRAD406 | 12.00 |
| 201 | Sorghum | CMDT45 | 11.42 |
| 202 | Sorghum | CRS4 | 10.42 |
| 203 | Sorghum | CSH16 | 11.25 |
| 204 | Sorghum | CSM388 | 14.46 |
| 205 | Sorghum | CSM63-E | 11.46 |
| 206 | Sorghum | CSV 14R | 11.91 |
| 207 | Sorghum | CSV 18 | 13.42 |
| 208 | Sorghum | CSV 216R | 9.23 |
| 209 | Sorghum | CSV 26 | 13.01 |
| 210 | Sorghum | CSV22 | 13.68 |
| 211 | Sorghum | CSV29R | 13.24 |
| 212 | Sorghum | Doua-G | 8.79 |
| 213 | Sorghum | E36-1 | 10.09 |
| 214 | Sorghum | E36-1 | 12.04 |
| 215 | Sorghum | Framida | 12.64 |
| 216 | Sorghum | Gnossiconi | 10.74 |
| 217 | Sorghum | GPN01 S01 266-2-1-6-vr | 8.68 |
| 218 | Sorghum | GPN01 S01 267-9-3-1-1 | 10.51 |
| 219 | Sorghum | GPN01 S01 267-9-3-3-vr | 9.71 |
| 220 | Sorghum | GRS1 (DSV5) | 10.58 |
| 221 | Sorghum | GS15-10 | 11.21 |
| 222 | Sorghum | GS23 | 10.59 |
| 223 | Sorghum | ICSB 370-2-9 | 10.38 |
| 224 | Sorghum | ICSV745 | 10.65 |
| 225 | Sorghum | ICSV93046-P1 | 10.29 |
| 226 | Sorghum | IS 41397-3-P6 | 11.02 |
| 227 | Sorghum | IS 8219-P1 | 9.34 |
| 228 | Sorghum | IS10876 | 12.45 |
| 229 | Sorghum | IS11026 | 17.90 |
| 230 | Sorghum | IS11473 | 17.01 |
| 231 | Sorghum | IS11919 | 17.25 |
| 232 | Sorghum | IS12804 | 14.11 |
| 233 | Sorghum | IS12883 | 13.43 |
| 234 | Sorghum | IS12965 | 17.06 |
| 235 | Sorghum | IS13893 | 13.54 |
| 236 | Sorghum | IS14556 | 11.82 |
| 237 | Sorghum | IS14779 | 14.05 |
| 238 | Sorghum | IS15401 | 9.65 |
| 239 | Sorghum | IS15466 | 11.41 |
| 240 | Sorghum | IS15945 | 14.31 |
| 241 | Sorghum | IS16528 | 15.58 |
| 242 | Sorghum | IS25249 | 17.78 |
| 243 | Sorghum | IS25548 | 16.24 |
| 244 | Sorghum | IS25910 | 17.85 |
| 245 | Sorghum | IS25989 | 18.22 |
| 246 | Sorghum | IS26046 | 16.54 |
| 247 | Sorghum | IS26222 | 16.05 |
| 248 | Sorghum | IS26617 | 15.34 |
| 249 | Sorghum | IS26694 | 14.40 |
| 250 | Sorghum | IS26701 | 13.69 |
| 251 | Sorghum | IS26737 | 14.44 |
| 252 | Sorghum | IS27557 | 17.65 |
| 253 | Sorghum | IS27786 | 17.10 |
| 254 | Sorghum | IS27887 | 15.04 |
| 255 | Sorghum | IS27912 | 14.45 |
| 256 | Sorghum | IS28141 | 14.82 |
| 257 | Sorghum | IS28313 | 17.35 |
| 258 | Sorghum | IS28389 | 17.01 |
| 259 | Sorghum | IS28449 | 17.40 |
| 260 | Sorghum | IS28614 | 18.38 |
| 261 | Sorghum | IS28747 | 17.88 |
| 262 | Sorghum | IS28849 | 15.85 |
| 263 | Sorghum | IS29091 | 12.29 |
| 264 | Sorghum | IS29100 | 14.85 |
| 265 | Sorghum | IS29187 | 12.50 |
| 266 | Sorghum | IS29304 | 13.86 |
| 267 | Sorghum | IS29314 | 14.64 |
| 268 | Sorghum | IS29472 | 11.47 |
| 269 | Sorghum | IS29568 | 17.50 |
| 270 | Sorghum | IS29606 | 14.16 |
| 271 | Sorghum | IS29689 | 15.39 |
| 272 | Sorghum | IS30231 | 15.04 |
| 273 | Sorghum | IS30460 | 12.38 |
| 274 | Sorghum | IS30507 | 15.59 |
| 275 | Sorghum | IS30572 | 16.80 |
| 276 | Sorghum | IS30838 | 14.32 |
| 277 | Sorghum | IS31186 | 12.59 |
| 278 | Sorghum | IS31446 | 15.59 |
| 279 | Sorghum | IS31681 | 16.64 |
| 280 | Sorghum | IS31706 | 16.06 |
| 281 | Sorghum | IS32787 | 13.46 |
| 282 | Sorghum | IS33023 | 15.97 |
| 283 | Sorghum | IS33090 | 14.84 |
| 284 | Sorghum | IS393(411)695 | 10.93 |
| 285 | Sorghum | IS7957 | 13.86 |
| 286 | Sorghum | IS8012 | 13.09 |
| 287 | Sorghum | IS9113 | 14.66 |
| 288 | Sorghum | *Sevata jonna* (landrace) | 12.66 |
| 289 | Sorghum | M35-1 | 9.69 |
| 290 | Sorghum | M35-1 | 10.75 |
| 291 | Sorghum | M35-1 | 11.55 |
| 292 | Sorghum | N13 | 10.26 |
| 293 | Sorghum | Parbahani Moti | 10.54 |
| 294 | Sorghum | Parbhani Jyothi | 10.62 |
| 295 | Sorghum | PB15220-1 | 10.61 |
| 296 | Sorghum | PB15881-3 | 10.45 |
| 297 | Sorghum | Phule Anuradah (RSV 458) | 13.79 |
| 298 | Sorghum | Phule Chitra (SPV 1546) | 13.36 |
| 299 | Sorghum | Phule Maulee (RSLG262) | 10.48 |
| 300 | Sorghum | Phule Maulee | 12.82 |
| 301 | Sorghum | Phule Revati (RSV1006) | 13.62 |
| 302 | Sorghum | Phule Vasudha | 17.99 |
| 303 | Sorghum | Phule Vasudha | 9.97 |
| 304 | Sorghum | PVK 801-P23 | 11.75 |
| 305 | Sorghum | R16 | 10.87 |
| 306 | Sorghum | R16 | 16.39 |
| 307 | Sorghum | R37-13-11-2-21-2 | 12.12 |
| 308 | Sorghum | R37-13-11-2-26(D3) | 13.35 |
| 309 | Sorghum | R37-13-11-2-30(D2) | 14.06 |
| 310 | Sorghum | R37-13-11-2-40 | 13.34 |
| 311 | Sorghum | R37-13-11-2-40(D1) | 14.25 |
| 312 | Sorghum | R37-13-11-2-40(D3) | 14.08 |
| 313 | Sorghum | R37-13-11-2-5-1 | 14.34 |
| 314 | Sorghum | R37-13-30-1(D6) | 12.60 |
| 315 | Sorghum | R37-13-30-1(D7) | 12.62 |
| 316 | Sorghum | R37-13-30-11-4 | 11.91 |
| 317 | Sorghum | R37-13-30-11-6 | 11.93 |
| 318 | Sorghum | R37-13-30-15(D3) | 12.56 |
| 319 | Sorghum | R37-13-30-16(D2) | 11.62 |
| 320 | Sorghum | R37-13-30-28(D3) | 15.09 |
| 321 | Sorghum | Ribdahu | 10.53 |
| 322 | Sorghum | RSLG262 | 13.59 |
| 323 | Sorghum | S35 | 11.65 |
| 324 | Sorghum | S35 | 15.17 |
| 325 | Sorghum | Sambalma | 9.83 |
| 326 | Sorghum | SP 2417-P3 | 10.41 |
| 327 | Sorghum | SPV2217 | 10.43 |
| 328 | Sorghum | SVD806 | 10.32 |