

**Table S1.** Characteristics of the trials.

| Trial Series    | Trial-ID | Year Established | LAT (°N) | LONG (°E) | ALT (m) | No. Of families |            | No. Of parents (Mom/Dad) |            |
|-----------------|----------|------------------|----------|-----------|---------|-----------------|------------|--------------------------|------------|
|                 |          |                  |          |           |         | Total           | Reselected | Total                    | Reselected |
| Half-sib trials |          |                  |          |           |         |                 |            |                          |            |
| 1               | F356     | 1983             | 67.05    | 20.3      | 490     | 322             | 17         | 322                      | 17         |
| 1               | F357     | 1983             | 66.38    | 18.37     | 560     | 308             | 17         | 308                      | 17         |
| 1               | F422     | 1985             | 66.43    | 23.29     | 200     | 301             | 16         | 301                      | 16         |
| 1               | F423     | 1985             | 67.6     | 23        | 315     | 273             | 16         | 273                      | 16         |
| 2               | F433     | 1986             | 66.43    | 23.32     | 130     | 67              | 6          | 67                       | 6          |
| 2               | F434     | 1986             | 66.28    | 20.98     | 165     | 68              | 6          | 68                       | 6          |
| 2               | F435     | 1986             | 64.92    | 18.75     | 280     | 60              | 6          | 60                       | 6          |
| 2               | F436     | 1986             | 64.98    | 21.1      | 40      | 53              | 5          | 53                       | 5          |
| 3               | F437     | 1986             | 66.28    | 20.98     | 165     | 67              | 5          | 67                       | 5          |
| 3               | F438     | 1986             | 64.92    | 18.75     | 280     | 75              | 5          | 75                       | 5          |
| 3               | F439     | 1986             | 64.98    | 21.1      | 40      | 73              | 5          | 73                       | 5          |
| 3               | F441     | 1986             | 64.02    | 20.57     | 65      | 74              | 5          | 74                       | 5          |
| 4               | F448     | 1987             | 62.97    | 16.167    | 280     | 155             | 17         | 155                      | 17         |
| 4               | F449     | 1987             | 62.67    | 14        | 440     | 186             | 17         | 186                      | 17         |
| 4               | F450     | 1987             | 61.01    | 13.49     | 505     | 242             | 23         | 242                      | 23         |
| 4               | F451     | 1987             | 61.95    | 13.11     | 680     | 209             | 18         | 209                      | 18         |
| 4               | F452     | 1987             | 61.79    | 12.39     | 715     | 176             | 18         | 176                      | 18         |
| 5               | F467     | 1988             | 63.85    | 18.32     | 230     | 245             | 18         | 245                      | 18         |
| 5               | F468     | 1988             | 65.2     | 21.1      | 130     | 246             | 18         | 246                      | 18         |
| 5               | F469     | 1988             | 62.75    | 16.58     | 370     | 246             | 18         | 246                      | 18         |
| 5               | F470     | 1988             | 62.57    | 16.98     | 225     | 246             | 18         | 246                      | 18         |
| 6               | F495     | 1990             | 67.05    | 20.32     | 470     | 254             | 16         | 254                      | 16         |
| 6               | F496     | 1990             | 66.55    | 19.37     | 370     | 285             | 16         | 285                      | 16         |
| 6               | F497     | 1990             | 64.8     | 20.13     | 265     | 291             | 16         | 291                      | 16         |
| 7               | F507     | 1991             | 64.55    | 19.27     | 260     | 354             | 36         | 354                      | 36         |
| 7               | F508     | 1991             | 64.37    | 17.8      | 550     | 352             | 36         | 352                      | 36         |
| 7               | F509     | 1991             | 65.98    | 21.22     | 65      | 354             | 36         | 354                      | 36         |
| 7               | F510     | 1991             | 67.05    | 20.32     | 470     | 350             | 36         | 350                      | 36         |
| 8               | F565     | 1994             | 65.46    | 17.98     | 390     | 215             | 13         | 215                      | 13         |
| 8               | F566     | 1994             | 65.63    | 18.4      | 560     | 207             | 13         | 207                      | 13         |
| 8               | F567     | 1994             | 67.05    | 20.32     | 470     | 213             | 13         | 213                      | 13         |
| 9               | F609     | 1996             | 63.46    | 19.25     | 40      | 206             | 7          | 206                      | 7          |
| 9               | F611     | 1996             | 62.8     | 13.6      | 520     | 190             | 5          | 190                      | 5          |
| 9               | F612     | 1996             | 62.72    | 13.92     | 460     | 191             | 5          | 191                      | 5          |

|                 |      |      |       |       |     |     |     |       |       |
|-----------------|------|------|-------|-------|-----|-----|-----|-------|-------|
| 9               | F613 | 1996 | 63.42 | 16.67 | 280 | 215 | 7   | 215   | 7     |
| 9               | F614 | 1996 | 63.73 | 16.67 | 260 | 196 | 7   | 196   | 7     |
| 9               | F615 | 1996 | 64.48 | 17.18 | 410 | 203 | 7   | 203   | 7     |
| Full-sib trials |      |      |       |       |     |     |     |       |       |
| 1               | F256 | 1971 | 63.57 | 16.82 | 180 | 48  | 20  | 13/13 | 10/8  |
| 1               | F257 | 1971 | 63.22 | 17.62 | 200 | 45  | 20  | 13/13 | 10/8  |
| 1               | F277 | 1972 | 63.35 | 17.63 | 330 | 50  | 20  | 15/15 | 10/8  |
| 2               | F258 | 1971 | 62.33 | 15.37 | 450 | 172 | 82  | 27/26 | 24/22 |
| 2               | F260 | 1971 | 62.82 | 17.28 | 365 | 181 | 86  | 28/28 | 24/23 |
| 2               | F261 | 1971 | 63.56 | 17.41 | 320 | 178 | 84  | 28/28 | 24/23 |
| 3               | F263 | 1972 | 63.65 | 17.75 | 325 | 196 | 124 | 34/33 | 28/25 |
| 3               | F264 | 1972 | 64.3  | 19.57 | 300 | 206 | 128 | 34/33 | 28/26 |
| 3               | F265 | 1972 | 64.58 | 20.15 | 330 | 202 | 127 | 33/32 | 28/26 |
| 4               | F279 | 1972 | 63.35 | 17.63 | 330 | 200 | 78  | 31/31 | 23/25 |
| 4               | F280 | 1973 | 64.03 | 19.85 | 200 | 198 | 78  | 31/31 | 23/25 |
| 4               | F281 | 1973 | 62.77 | 17.12 | 300 | 199 | 78  | 31/31 | 23/25 |
| 5               | F282 | 1974 | 65.02 | 20.43 | 260 | 157 | 80  | 34/26 | 22/20 |
| 5               | F283 | 1974 | 63.98 | 19.32 | 240 | 151 | 77  | 34/26 | 22/20 |
| 5               | F285 | 1974 | 63.88 | 20.55 | 10  | 150 | 77  | 33/26 | 22/20 |
| 6               | F312 | 1975 | 65.02 | 20.43 | 260 | 150 | 56  | 26/26 | 22/16 |
| 6               | F316 | 1976 | 64.1  | 18.62 | 380 | 151 | 57  | 27/26 | 21/16 |
| 6               | F313 | 1977 | 63.38 | 17.6  | 280 | 131 | 53  | 27/26 | 21/16 |
| 7               | F327 | 1977 | 66.08 | 22.47 | 110 | 178 | 16  | 33/33 | 2/141 |
| 7               | F328 | 1977 | 64.73 | 18.9  | 300 | 179 | 16  | 33/33 | 2/141 |
| 7               | F329 | 1978 | 66.07 | 20.43 | 335 | 158 | 15  | 33/31 | 2/13  |