

**Supplemental Table S1.** *Linum* species and populations (oilseed or OS; cut flower or CF selections), accession code, seed source, location and/or collection site of source seeds grown for the analysis.

| Species              | Accession   | Seed source, location; (collection site)                   |
|----------------------|-------------|--|
| <i>L. altaicum</i>   | CN 107286*  | GRIN-CA, Plant Gene Resources of Canada, Saskatoon, Canada |
|                      | CN 19182*   | GRIN-CA  |
|                      | PI 522277*  | USDA-GRIN, Ames, IA  |
|                      | PI 650292*  | USDA-GRIN (Baden-Wurttemberg, Germany)                     |
|                      | 202723      | Kew Millennium Seed Bank                                   |
| <i>L. austriacum</i> | Ames 29749* | USDA-GRIN (Ukraine)  |
|                      | CN 107255*† | GRIN-CA  |
|                      | CN 107268   | GRIN-CA  |
|                      | CN 107288*  | GRIN-CA  |
|                      | PI 440472*  | USDA-GRIN (Russian Federation)                             |
|                      | PI 440473*  | USDA-GRIN (Russian Federation)                             |
|                      | PI 502405*† | USDA-GRIN (Ukraine)  |
|                      | PI 502410*  | USDA-GRIN (Russian Federation)                             |
|                      | PI 650293*† | USDA-GRIN (Hungary)  |
|                      | PI 650294*  | USDA-GRIN (Stavropol, Russian Federation)                  |
|                      | PI 650295*† | USDA-GRIN (Poland)   |
|                      | PI 650296*  | USDA-GRIN (Tolbukhin, Bulgaria)                            |
|                      | PI 650297*  | USDA-GRIN (Germany)  |
|                      | PI 650298*  | USDA-GRIN (Plovdiv, Bulgaria)                              |
|                      | PI 650299*  | USDA-GRIN (Tolbukhin, Bulgaria)                            |
|                      | PI 650300*  | USDA-GRIN (Bacs-Kiskun, Hungary)                           |
|                      | PI 650301*† | USDA-GRIN (Armenia)  |
|                      | PI 650302   | USDA-GRIN (Krym, Ukraine)                                  |
|                      | PI 650303   | USDA-GRIN (Mongolia)                                       |
|                      | PI 650304   | USDA-GRIN (Mongolia)                                       |
| <i>L. baicalense</i> | PI 650305   | USDA-GRIN (Mongolia)                                       |
|                      | PI 650306   | USDA-GRIN (Mongolia)                                       |
|                      | PI 650307   | USDA-GRIN (Mongolia)                                       |
| <i>L. bienne</i>     | 806822*     | Kew Millennium Seed Bank                                   |
|                      | Ames 19348* | USDA-GRIN (Portugal)                                       |
|                      | CN 107257*  | GRIN-CA  |
|                      | CN 107258   | GRIN-CA  |
|                      | CN 107299   | GRIN-CA  |
|                      | CN 113641   | GRIN-CA  |
|                      | CN 113642   | GRIN-CA  |
|                      | PI 231886*  | USDA-GRIN (Belgium)  |
|                      | PI 253971*  | USDA-GRIN (Iraq)   |
|                      | PI 254371   | USDA-GRIN (Delhi, India)                                   |

|                        |                          |  |
|------------------------|--------------------------|--|
|                        | PI 650308*               | USDA-GRIN (Coimbra, Portugal)  |
|                        | PI 522285*               | USDA-GRIN (IA, USA)  |
|                        | PI 522286                | USDA-GRIN (IA, USA)  |
|                        | PI 522287                | USDA-GRIN (IA, USA)  |
|                        | PI 522288*               | USDA-GRIN (IA, USA)  |
|                        | PI 522289                | USDA-GRIN (IA, USA)  |
|                        | PI 522291                | USDA-GRIN (IA, USA)  |
|                        | PI 522290*               | USDA-GRIN (IA, USA)  |
|                        | PI 633835*               | USDA-GRIN (Delhi, India)   |
| <i>L. grandiflorum</i> | ‘Bright Eyes’            | Outsidepride Seed Source, LLC, 915 North Main Street, Independence, OR 97351 |
|                        | CN 107259                | GRIN-CA  |
|                        | CN 107260                | GRIN-CA  |
|                        | CN 107263                | GRIN-CA  |
|                        | CN 107287                | GRIN-CA  |
|                        | CN 19026                 | GRIN-CA  |
|                        | CN 19027                 | GRIN-CA  |
|                        | ‘Scarlet Flax’           | Botanical Interests, Inc, 660 Compton Street, Broomfield, CO 80020           |
| <i>L. hirsutum</i>     | Ames 23759               | USDA-GRIN (Pest, Hungary)  |
|                        | CN 107271                | GRIN-CA  |
|                        | PI 502406*               | USDA-GRIN (Russian Federation)   |
|                        | PI 502407*               | USDA-GRIN (Russian Federation)   |
|                        | PI 502408*               | USDA-GRIN (Russian Federation)   |
|                        | PI 502409*               | USDA-GRIN (Russian Federation)   |
|                        | PI 650316                | USDA-GRIN (Hungary)  |
|                        | PI 650317*               | USDA-GRIN (Poland)   |
|                        | PI 650318*               | USDA-GRIN (Romania)  |
| <i>L. lewisii</i>      | ‘Maple Grove’ Ames 27614 | USDA-GRIN (UT, USA)  |
|                        | Ames 29912               | USDA-GRIN (USA, OR)  |
|                        | Ames 31360               | USDA-GRIN (USA)  |
|                        | Ames 31361               | USDA-GRIN (USA)  |
|                        | Ames 31364*              | USDA-GRIN (USA)  |
|                        | Ames 31365*              | USDA-GRIN (USA)  |
|                        | Ames 31366               | USDA-GRIN (USA)  |
|                        | Ames 31368*              | USDA-GRIN (USA)  |
|                        | Ames 31369               | USDA-GRIN (USA)  |
|                        | Ames 31370               | USDA-GRIN (USA)  |
|                        | Ames 31371*              | USDA-GRIN (USA)  |
|                        | Ames 31372               | USDA-GRIN (USA)  |
|                        | Ames 32565*              | USDA-GRIN (USA)  |
|                        | Ames 32566               | USDA-GRIN (USA)  |
|                        | Ames 32568               | USDA-GRIN (USA)  |

|                         |                              |   |
|-------------------------|------------------------------|---|
|                         | Ames 33352                   | USDA-GRIN (NV, USA)   |
|                         | Ames 33353*                  | USDA-GRIN (AZ, USA)   |
|                         | Ames 33354*                  | USDA-GRIN (USA)   |
|                         | CN 107266*†                  | GRIN-CA   |
|                         | CN 107279                    | GRIN-CA   |
|                         | CN 107290                    | GRIN-CA   |
|                         | CN 107292                    | GRIN-CA   |
|                         | CN 107300                    | GRIN-CA   |
|                         | CN 19186                     | GRIN-CA   |
|                         | PI 452487                    | USDA-GRIN (MT, USA)   |
|                         | PI 522305*†                  | USDA-GRIN (IA, USA)   |
|                         | PI 522306*†                  | USDA-GRIN (IA, USA)   |
|                         | PI 650320*                   | USDA-GRIN (UT, USA)   |
| <i>L. pallescens</i>    | 774464                       | Kew Millennium Seed Bank  |
|                         | Ames 21727                   | USDA-GRIN (Asia)  |
| <i>L. perenne</i>       | Ames 21222*                  | USDA-GRIN (Moldova)   |
|                         | Ames 31374*                  | USDA-GRIN (USA)   |
|                         | Ames 32570                   | USDA-GRIN (USA)   |
|                         | ‘Blue Flax’*                 | Livingston Seed, 202 S Washington St, Norton, MA 02766                                  |
|                         | ‘Blue Flax’*†                | AK Wildflowers, Denali Seed Company, 6237 S Pere Marquette Highway, Pentwater, MI 49449 |
|                         | CN 107256*                   | GRIN-CA   |
|                         | CN 107261*                   | GRIN-CA   |
|                         | CN 107270*                   | GRIN-CA   |
|                         | CN 107282*†                  | GRIN-CA   |
|                         | CN 107283*†                  | GRIN-CA   |
|                         | ‘Himmelszelt’ CN 19024*†     | GRIN-CA   |
|                         | CN 19025                     | GRIN-CA   |
|                         | CN 19179                     | GRIN-CA   |
|                         | ‘Appar’ PI 445972*†          | USDA-GRIN (SD, USA)   |
|                         | PI 650323*                   | USDA-GRIN (Hungary)   |
|                         | PI 650324*†                  | USDA-GRIN (Hungary)   |
|                         | PI 650325*†                  | USDA-GRIN (Hungary)   |
|                         | PI 650326*                   | USDA-GRIN (Hungary)   |
|                         | PI 650327*†                  | USDA-GRIN (Hungary)   |
|                         | PI 650328*                   | USDA-GRIN (ID, USA)   |
|                         | PI 650329                    | USDA-GRIN (ID, USA)   |
| <i>L. usitatissimum</i> | ‘Bison’ CN 33399             | GRIN-CA   |
|                         | ‘Linko de Riga’ CN 97295     | GRIN-CA   |
|                         | ‘N.D. Resistant 52’ CN 97375 | GRIN-CA   |
|                         | ‘Tammes #7 Pink’ CN 97427    | GRIN-CA   |

|                      |                                  |
|----------------------|----------------------------------|
| ‘Novelty’ PI 522557  | USDA-GRIN (Ontario, Canada)      |
| ‘Bison’ PI 522606    | USDA-GRIN (ND, USA)              |
| ‘Raja’ PI 523232     | USDA-GRIN (Ontario, Canada)      |
| ‘Flanders’ PI 539916 | USDA-GRIN (Saskatchewan, Canada) |

## Selection

### Populations

#### Selections - CF

|                    |                  |
|--------------------|------------------|
| R-14.3-3-DT clone* | Breeding program |
| R-2.2-2-DT*†       | Breeding program |
| R-2.2-2-DT clone*  | Breeding program |
| R-2.6-1-DT clone*  | Breeding program |
| R-6.10-2-DT clone* | Breeding program |
| R-7.6-2-DT*†       | Breeding program |
| R-7.6-2-DT clone*  | Breeding program |
| R-9.3-1-DT*†       | Breeding program |
| R-LBR5-DT clone*   | Breeding program |
| S-105-1-DT*        | Breeding program |
| S-272-5-DT clone*  | Breeding program |
| S-290-2-DT*        | Breeding program |
| S-290-2-DT clone*  | Breeding program |
| S-293-4-DT*†       | Breeding program |
| S-293-4-DT clone*  | Breeding program |
| S-294-3-DT clone*  | Breeding program |
| S-297-3-DT*†       | Breeding program |

#### Selections - OS

|                    |                  |
|--------------------|------------------|
| R-10.2-2-DT*†      | Breeding program |
| R-10.2-2-DT clone* | Breeding program |
| R-11.1-1-DT*†      | Breeding program |
| R-3.2-1-DT*†       | Breeding program |
| R-3.2-1-DT clone*  | Breeding program |
| R-5.1-1-DT*        | Breeding program |
| R-5.1-1-DT clone*  | Breeding program |
| R-8.3-2-DT*†       | Breeding program |
| R-9.4-1-DT*†       | Breeding program |
| S-111-1-DT*†       | Breeding program |
| S-121-1-DT*†       | Breeding program |
| S-121-1-DT clone*  | Breeding program |
| S-291-1-DT*        | Breeding program |
| S-291-1-DT clone*  | Breeding program |
| S-291-2-DT*†       | Breeding program |
| S-292-1-DT*†       | Breeding program |
| S-292-2-DT*†       | Breeding program |
| S-292-2-DT clone*  | Breeding program |
| S-292-5-DT*†       | Breeding program |
| S-293-2-DT*†       | Breeding program |

|                   |                  |
|-------------------|------------------|
| S-293-2-DT clone* | Breeding program |
| S-293-5-DT*†      | Breeding program |
| S-293-5-DT clone* | Breeding program |
| S-297-1-DT*†      | Breeding program |
| S-297-1-DT clone* | Breeding program |

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\*Included in multi-year analyses

†Included in harvest number comparison