

Table S1. Intrid and cross or cultivars and seed source origin of durum cultivars tested at seedling in the greenhouse and field of selected seedling resistant.

| Tetraploid accessions | | Country |
|-----------------------|--|---------------|
| Intrid ^a | Cross or cultivar | Origin (seed) |
| G5375 | RL6010/6*YR//2*STIL/MEX75 | CIMMYT |
| G5369 | RL6010/6*YR//2*STIL/MEX75 | CIMMYT |
| CWI20891 | RECIO DE MALAGA | SPAIN |
| CWI22027 | FAO29.934 | CYPRUS |
| DW5345 | KKC/1381.2 | TURKEY |
| G5359 | DWL5023/CNO79 | CIMMYT |
| G5392 | RL6043/3*NAC//2*TCHO | CIMMYT |
| DW15671 | SOMAT_3//SOOTY_9/RASCON_37/3/BINTEPE 85/SULA | CIMMYT |
| G5364 | DWL5023/CNO79 | CIMMYT |
| DW15675 | AINZEN_1/6/2*CMH82A.1062/3/GGOVZ394//SBA81/PLC/4/AAZ_1/CREX/5/HUI//CIT71/CII | CIMMYT |
| CWI21151 | AZIZIAH 12565 | PORTUGAL |
| CWI20528 | HARLAN J.R 5719 | TURKEY |
| CWI23230 | PARKER JH 52 | ETHIOPIA |
| CWI22327 | HARLAN J.R 14 | JORDAN |
| CWI32536 | ATSIKI 3 | GREECE |
| G6857 | CMH83.2900 | CIMMYT |
| G3543 | H567.71/CIT71//2*MEX75/2*SHWA | CIMMYT |
| G8743 | SN64/3*CIT71 | CIMMYT |
| CWI22214 | IAR.W.92.1 | ETHIOPIA |
| CWI23460 | ELS6404.156.2 | ETHIOPIA |
| DW7085 | BROWN SEEDED A1-124 | CIMMYT |
| G8731 | CMH82A.1056 | CIMMYT |
| G5235 | TDIC1458/MEX75//CIT71/T.BOEOTICUM | CIMMYT |
| G5207 | T.DIC 1460/MEX75//MEXI75/T.MON.2433 | CIMMYT |
| G5394 | RL6043/3*NAC//2*TCHO | CIMMYT |
| DW15673 | SOMAT_3.1//WODUCK/CHAM_3/5/AJAIA_16//HORA/JRO/3/GAN/4/ZAR | CIMMYT |
| G8505 | DWL5023/NAC | CIMMYT |
| CWI22423 | ISWRN 68-443/GA-A7, PI434878 | SOUTH AFRICA |
| CWI21666 | G46049, PI264438 | GREECE |
| CWI20476 | HARLAN J.R 4460 | TURKEY |
| CWI22683 | Citr 3754 | RUSSIA |
| CWI22087 | IAR.W.11.2 | ETHIOPIA |
| CWI21791 | CANDICANS 76.10 | RUSSIA |
| CWI22053 | DUBBIE | ISRAEL |

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| G5208 | T.DIC 1460/MEX75//MEX75/T.MON.2433 | CIMMYT |
| G5424 | CIT71/2*T.CARTHLICUM | CIMMYT |
| DW649 | CRA/P66.270 | CIMMYT |
| G3988 | T.DIC 1460/MEXI75 | CIMMYT |
| CWI355 | CALIFORNIA ALCALA REAL | MEXICO |
| G5421 | CMH77A.682/YAV79 | CIMMYT |
| CWI23606 | QUALSET BYDV 6 | USA |
| CWI21696 | PI265009 | YUGOSLAVIA |
| G8813 | KHP*4/D31708 | CIMMYT |
| DW7103 | WHITE SEEDED K2-152 | CIMMYT |
| CWI22175 | IAR.W.63.1 | ETHIOPIA |
| CWI20114 | BEYAZ KAPCIK | TURKEY |
| CWI23067 | ABYSSINIAN 31 | ETHIOPIA |
| CWI20425 | HARLAN J.R 4497 | TURKEY |
| CWI21256 | FELLOWS P8741 | ETHIOPIA |
| CWI22139 | IAR.W.42.3 | ETHIOPIA |
| CWI22166 | IAR.W.56.2 | ETHIOPIA |
| CWI22201 | IAR.W.84.2 | ETHIOPIA |
| CWI22089 | IAR.W.12.2 | ETHIOPIA |
| CWI22102 | IAR.W.22.3 | ETHIOPIA |
| CWI22280 | IAR.W.174.3 | ETHIOPIA |
| CWI22064 | IAR.W.1.1 | ETHIOPIA |
| CWI22294 | IAR.W.185.1 | ETHIOPIA |
| CWI22250 | IAR.W.131.1 | ETHIOPIA |
| CWI23359 | MORISCO | SPAIN |
| DW3139 | GORDEIFORME SARI BUGDAY | TURKEY |
| CWI23446 | ELS6404.139.7 | ETHIOPIA |
| G6904 | CMH84.1106 | CIMMYT |
| CWI21737 | HARLAN J.R 1939 | ETHIOPIA |
| CWI23440 | ELS6404.131.3 | ETHIOPIA |
| CWI22143 | IAR.W.44.2 | ETHIOPIA |
| CWI23065 | ABYSSINIAN 26 | ETHIOPIA |
| CWI23385 | ELS6404.84.3 | ETHIOPIA |
| CWI23473 | ELS6404.61.2 | ETHIOPIA |

Intrid^a = CIMMYT Germplasm Bank accession number

Table S2. Intrid and cross or cultivar and seed source origin of tetraploid accessions tested against 15 leaf rust races at seedling stage in the greenhouse

| | | Country |
|-----------------------|--|---------------|
| Intrid | Cross or cultivar | Origin (seed) |
| DW7085 ^a | BROWN SEEDED A1-124 | CIMMYT |
| DW7103 | WHITE SEEDED K2-152 | CIMMYT |
| DW15671 | SOMAT_3//SOOTY_9/RASCON_37/3/BINTEPE 85/SULA | CIMMYT |
| DW15673 | SOMAT_3.1//WODUCK/CHAM_3/5/AJAIA_16//HORA/JRO/3/GAN/4/ZAR | CIMMYT |
| DW15675 | AINZEN_1/6/2*CMH82A.1062/3/GGOVZ394//SBA81/PLC/4/AAZ_1/CREX/5/HUI//CIT71/CII | CIMMYT |
| G3988 ^b | T.DIC 1460/MEX75 | CIMMYT |
| G5424 | CIT71/2*T. CARTHLICUM | CIMMYT |
| G8731 | CMH82A.1056 | CIMMYT |
| G3543 | H567.71/CIT71//2*MEX75/2*SHWA | CIMMYT |
| G6857 | CMH83.2900 | CIMMYT |
| G6904 | CMH84.1106 | CIMMYT |
| DW7147 | DULAX 2 | CIMMYT |
| G5359 | DWL5023/CNO79 | CIMMYT |
| G5364 | DWL5023/CNO79 | CIMMYT |
| G5207 | T.DIC 1460/MEX75//MEX75/T.MONOCOCCUM.2433. | CIMMYT |
| G5369 | RL6010/6*YR//2*STIL/MEX75 | CIMMYT |
| G5375 | RL6010/6*YR//2*STIL/MEX75 | CIMMYT |
| G5394 | RL6043/3*NAC//2*TCHO | CIMMYT |
| CWI23065 ^c | ABYSSINIAN 26 | ETHIOPIA |
| CWI23440 | ELS6404.131.3 | ETHIOPIA |
| CWI23446 | ELS6404.139.7 | ETHIOPIA |
| CWI23473 | ELS6404.61.2 | ETHIOPIA |
| CWI23385 | ELS6404.84.3 | ETHIOPIA |
| CWI21256 | FELLOWS P8741 | ETHIOPIA |
| CWI21737 | HARLAN J.R 1939 | ETHIOPIA |
| CWI22064 | IAR.W.1.1 | ETHIOPIA |
| CWI22089 | IAR.W.12.2 | ETHIOPIA |
| CWI22294 | IAR.W.185.1 | ETHIOPIA |
| CWI22102 | IAR.W.22.3 | ETHIOPIA |
| CWI22143 | IAR.W.44.2 | ETHIOPIA |
| CWI22166 | IAR.W.56.2 | ETHIOPIA |
| CWI22175 | IAR.W.63.1 | ETHIOPIA |
| CWI22201 | IAR.W.84.2{ | ETHIOPIA |

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| CWI22214 | IAR.W.92.1 | ETHIOPIA |
| CWI20872 | ST483 | ETHIOPIA |

Table S3. Intrid and cross or cultivar and seed source origin of seedling susceptible in the greenhouse, but adult plant resistant.

| Intrid^a | Cross or cultivar | Country Origin (seed) |
|---------------------------|------------------------------|----------------------------------|
| G5202 | T.DIC 1460/2*MEX75 | CIMMYT |
| DW5199 | IM//CIT71/CII | ETHIOPIA |
| CWI20826 | ABISPADO DE LEBRIJA | SPAIN |
| DW4477 | ASTURIE L2 | SPAIN |
| CWI13539 | AUSTRALIAN | INDIA |
| CWI21033 | CANOCO | PORTUGAL |
| CWI19754 | DICKSON J.G 417 | ITALY |
| CWI19758 | DICKSON J.G 429 | PORTUGAL |
| CWI26558 | F10 DURUM | BRAZIL |
| CWI22230 | IAR.W.98.4 | ETHIOPIA |
| CWI22921 | I57581 | USSR |
| CWI22927 | PI57587 | USSR |
| CWI22466 | GIZA 39 | UAR |
| CWI23095 | PI61874 | MOROCCO |
| CWI23602 | QUALSET BYDV 2 | USA |
| CWI75601 | VIOLET DURUM | ETHIOPIA |
| DW4192 | ARRANCADA-P3-13695 | PORTUGAL |
| G7358 | TDIC1458/MEX75//KHP*2/D31708 | CIMMYT |
| G7492 | FTA/CJ71//CMH76A.169/2*MEX75 | CIMMYT |
| CWI21086 | ADDIS ALEM 171 | ETHIOPIA |
| CWI20285 | BARRIGON PUBESCENT | MEXICO |
| CWI23075 | BELADI 33 | UAR |
| CWI22396 | BENOR | FRANCE |
| CWI20657 | HANSOTI | INDIA |
| CWI22951 | PI57659 | UAR |

Intrid = CIMMYT Germplasm Bank accession number.

Table S4. Intrid and cross or cultivar and seed source of selected seedling susceptible, but adult plant resistant winter or facultative tetraploid accessions.

| Intrid^a | Cross or cultivar | Country Origin (seed) |
|---------------------------|----------------------------------|----------------------------------|
| DW5442 | BR180/3/60.120/LDS//64.207/4/HAM | TURKEY |
| CWI22788 | BLANCA DE NOLAS | SPAIN |
| DW4212 | CAMBRIDGE 1 | UK |
| CWI334 | ENANO DE FACU | MEXICO |
| CWI22799 | ENANO DE JAEN | MEXICO |
| CWI356 | ENANO-DE-ANDUJAR | MEXICO |
| CWI20224 | HARLAN J.R 3342 | TURKEY |
| CWI22966 | VAVILOV NI 6931 | RUSSIA |
| CWI22789 | CANA MACIZA | SPAIN |
| CWI22035 | DF68.71 | RUMANIA |
| CWI23196 | PI68240 | USSR |
| CWI22844 | AMARELO | PORTUGAL |
| DW4219 | CAMBRIDGE 19 | UK |
| CWI20330 | BELADI BOUHI | EGYPT |

Intrid = CIMMYT Germplasm Bank accession number