# **Supplemental Material**

## Parallel adaptation to highland climate in maize domesticated populations

Shohei Takuno, Kelly Swarts, Matthew B. Hufford, Rob J. Elshire, Jeffrey C. Glaubitz, Edward S. Buckler and Jeffrey Ross-Ibarra

## Supplemental Table 1 List of maize landraces used in this study

$\overline{\mathrm{ID}^a}$	USDA ID	Population	Landrace	Locality	Latitude	Longitude	Elevation	Origin
RIMMA0409	PI 478968	Mexico	Tepecintle	Chiapas, Mexico	15.4	-92.9	107	USDA
RIMMA0410	PI 478970	Lowland	Vandeno	Chiapas, Mexico	15.4	-92.9	107	USDA
RIMMA0433	PI 490825		Nal Tel ATB	Chiquimula, Guatemala	14.7	-89.5	457	USDA
RIMMA0441	PI 515538		Coscomatepec	Veracruz, Mexico	19.2	-97.0	1320	USDA
RIMMA0615	PI 628480		Tuxpeno	Puebla, Mexico	20.1	-97.2	152	USDA
RIMMA0619	PI 645772		Pepitilla	Guerrero, Mexico	18.4	-99.5	747	USDA
RIMMA0628	PI 646017		Tuxpeno Norteno	Tamaulipas, Mexico	23.3	-99.0	300	USDA
RIMMA0696	Ames 28568		Tuxpeno	El Progreso, Guatemala	16.5	-90.2	30	Goodman
RIMMA0700	NSL 291626		Olotillo	Chiapas, Mexico	16.8	-93.2	579	Goodman
RIMMA0701	PI 484808		Olotillo	Chiapas, Mexico	16.6	-92.7	686	Goodman
RIMMA0702	Ames 28534		Negro de Tierra Caliente	Sacatepequez, Guatemala	14.5	-90.8	1052	Goodman
RIMMA0703	NSL 283390		Nal Tel	Yucatan, Mexico	20.8	-88.5	30	Goodman
RIMMA0709	Ames 28452		Tehua	Chiapas, Mexico	16.5	-92.5	747	Goodman
RIMMA0710	PI 478988		Tepecintle	Chiapas, Mexico	15.3	-92.6	91	Goodman
RIMMA0712	NSL 291696 CYMT		Oloton	Baja Verapaz, Guatemala	15.3	-90.3	1220	Goodman
RIMMA0716	Ames 28459		Zapalote Grande	Chiapas, Mexico	15.3	-92.7	91	Goodman
RIMMA0720	PI 489372		Negro de Tierra Caliente	Guatemala	15.5	-88.9	39	Goodman
RIMMA0721	Ames 28485		Nal Tel ATB	Chiquimula, Guatemala	14.6	-90.1	915	Goodman
RIMMA0722	Ames 28564		Dzit Bacal	Jutiapa, Guatemala	14.3	-89.7	737	Goodman
RIMMA0727	Ames 28555		Comiteco	Guatemala	14.4	-90.5	1151	Goodman
RIMMA0729	PI 504090		Tepecintle	Guatemala	15.4	-89.7	122	Goodman
RIMMA0730	Ames 28517		Quicheno Late	Sacatepequez, Guatemala	14.5	-90.8	1067	Goodman
RIMMA0731	PI 484137		Bolita	Oaxaca, Mexico	16.8	-96.7	1520	Goodman
RIMMA0733	PI 479054		Zapalote Chico	Oaxaca, Mexico	16.6	-94.6	107	Goodman
RIMMA0416	PI 484428	Mexico	Cristalino de Chihuahua	Chihuahua, Mexico	29.4	-107.8	2140	NA
RIMMA0417	PI 484431	Highland	Azul	Chihuahua, Mexico	28.6	-107.5	2040	USDA
RIMMA0418	PI 484476		Gordo	Chihuahua, Mexico	28.6	-107.5	2040	USDA
RIMMA0421	PI 484595		Conico	Puebla, Mexico	19.9	-98.0	2250	USDA
RIMMA0422	PI 485071		Elotes Conicos	Puebla, Mexico	19.1	-98.3	2200	USDA
RIMMA0423	PI 485116		Cristalino de Chihuahua	Chihuahua, Mexico	29.2	-108.1	2095	NA
RIMMA0424	PI 485120		Apachito	Chihuahua, Mexico	28.0	-107.6	2400	USDA
RIMMA0425	PI 485128		Palomero Tipo Chihuahua	Chihuahua, Mexico	26.8	-107.1	2130	USDA
RIMMA0614	PI 628445		Mountain Yellow	Jalisco, Mexico	20.0	-103.8	2060	USDA
RIMMA0616	PI 629202		Zamorano Amarillo	Jalisco, Mexico	20.8	-102.8	1800	USDA
RIMMA0620	PI 645786		Celaya	Guanajuato, Mexico	20.2	-100.9	1799	USDA
RIMMA0621	PI 645804		Zamorano Amarillo	Guanajuato, Mexico	21.1	-101.7	1870	USDA
RIMMA0623	PI 645841		Palomero de Jalisco	Jalisco, Mexico	20.0	-103.7	2520	USDA
RIMMA0625	PI 645984		Cacahuacintle	Puebla, Mexico	19.0	-97.4	2600	USDA
RIMMA0626	PI 645993		Arrocillo Amarillo	Puebla, Mexico	19.9	-97.6	2260	USDA
RIMMA0630	PI 646069		Arrocillo Amarillo	Veracruz, Mexico	19.8	-97.3	2220	USDA
RIMMA0670	Ames 28508		San Marceno	San Marcos, Guatemala	15.0	-91.8	2378	Goodman
RIMMA0671	Ames 28538		Salpor Tardio	Solola, Guatemala	14.8	-91.3	2477	Goodman
RIMMA0672	PI 483613		Chalqueno	Mexico, Mexico	19.7	-99.1	2256	Goodman
RIMMA0674	PI 483617		Toluca	Mexico, Mexico	19.3	-99.7	2652	Goodman
RIMMA0677	Ames 28476		Conico Norteno	Zacatecas, Mexico	21.4	-102.9	1951	Goodman
RIMMA0680	Ames 28448		Tabloncillo	Jalisco, Mexico	20.4	-102.2	1890	Goodman
DIMINIALOGO	PI 484571		Tablilla de Ocho	Jalisco, Mexico	22.1	-103.2	1700	Goodman
RIMMA0682 RIMMA0687	Ames 28473		Conico Norteno	Queretaro, Mexico	20.4	-100.0	1921	Goodman

 $<sup>^{</sup>a}$  GBS data are available for the accessions in bold font.

## Supplemental Table 1 (continued)

RIMMA0888   Pl 443820   South America   Amagaceron   Antioquia, Colombia   6.9   .75.3   1500   USDA   RIMMA0899   Pl 444020   Lowland   Costeno   Affantico, Colombia   4.5   .75.6   .75.5   .35.3   USDA   RIMMA0919   Pl 444256   Commo   Caldass, Colombia   4.8   .75.6   .75.5   .75.5   USDA   RIMMA0919   Pl 444426   Andaqui   Caspeta, Colombia   1.4   .75.8   .700   USDA   RIMMA0929   Pl 444473   Costeno   Cordoba, Colombia   8.3   .75.2   100   USDA   RIMMA0829   Pl 44473   Negrito   Conco, Colombia   8.3   .75.2   100   USDA   RIMMA0829   Pl 44473   Negrito   Conco, Colombia   8.5   .77.3   30   USDA   RIMMA0829   Pl 444821   Negrito   Conco, Colombia   8.5   .77.5   30   USDA   RIMMA0829   Pl 444824   Capeterno   Hulis, Colombia   2.6   .75.5   1100   USDA   RIMMA0829   Pl 444923   Pl 44492   Pira   Magdalema, Colombia   1.6   .72.9   50   USDA   RIMMA0829   Pl 444923   Pl 44924   Carisco   Magdalema, Colombia   1.6   .72.9   50   USDA   RIMMA0829   Pl 444923   Pl 44924   Carisco   Magdalema, Colombia   1.6   .72.9   1000   USDA   RIMMA0404   Pl 44532   Play Grande   Notre de Santander, Colombia   1.3   .77.5   1000   USDA   RIMMA0404   Pl 44532   Play Grande   Notre de Santander, Colombia   7.0   .72.5   1500   USDA   RIMMA0404   Pl 44531   Yucatan   Tolima, Colombia   4.4   .73.3   1100   USDA   RIMMA0404   Pl 44531   Yucatan   Tolima, Colombia   4.2   .74.9   450   USDA   RIMMA0404   Pl 44531   Yucatan   Tolima, Colombia   4.2   .74.9   450   USDA   RIMMA0404   Pl 44531   Yucatan   Tolima, Colombia   4.2   .74.9   450   USDA   RIMMA0404   Pl 44539   Rimma0404   Pl 44539   Rimma0404   Pl 44539   Rimma0404   Rimma0404   Pl 44539   Rimma0404   Rimma0404   Pl 44539   Rimma0404   Rimma0404   Pl 44530   Rimma0404   Rimma0404   Pl 44530   Rimma0404	ID	USDA ID	Population	Landrace	Locality	Latitude	Longitude	Elevation	Origin
RIMMA0890  PI 4440081  Lovaland  Cotano  Caldas, Colombia  4.5  7.5  353  USDA    RIMMA0890  PI 444296	RIMMA0388		<u> </u>	Amagaceno		6.9			
RIMMA0390  PI +444591  Commo  Cladus, Colombia  4.5  -75.6  35.3  USDA    RIMMA0392  PI +444590  Andaqui  Capeta, Colombia  1.4  -75.5  CDA  USDA    RIMMA0393  PI +444791  Costeno  Cordona, Colombia  8.3  -75.2  100  USDA    RIMMA0395  PI +444731  Costeno  Cordona, Colombia  4.8  -74.7  100  USDA    RIMMA0396  PI +444731  Cospetion  Mackinemore, Colombia  2.6  -75.3  1100  USDA    RIMMA0397  PI +444731  Cospetion  Magalema, Colombia  2.6  -75.2  170  USDA    RIMMA0398  PI +444954  Costeno  Magalema, Colombia  10.2  -75.2  170  USDA    RIMMA0409  PI +445956  Cospeta  Pira Namija  Narian, Colombia  10.2  -75.2  150  USDA    RIMMA0409  PI +445956  Cospeta  Cospeta  Notre Estantander, Colombia  4.2  -73.3  150  US	RIMMA0389	PI 444005	Lowland	_	Atlantico, Colombia	10.4	-74.9	7	USDA
RIMMA0392  PI 444473  Costeno  Craputo, Colombia  1.8  -75.2  100  USDA    RIMMA0393  PI 444471  Costeno  Cordoba, Colombia  8.3  -75.2  100  USDA    RIMMA0395  PI 444471  Costeno  Cundimamarc, Colombia  8.5  -77.3  100  USDA    RIMMA0396  PI 444481  Cocquetero  Hail, Colombia  2.6  -75.3  1100  USDA    RIMMA0397  PI 444923  Cocquetero  Magalatera, Colombia  10.4  -75.7  27  USDA    RIMMA0398  PI 444923  Cocquetero  Magalatera, Colombia  10.4  -75.7  100  USDA    RIMMA0409  PI 445163  Cocquetero  Magalatera, Colombia  1.3  -75.2  1500  USDA    RIMMA0409  PI 445514  Opya  Orarde  Sammeter, Colombia  1.3  -75.2  1500  USDA    RIMMA0407  PI 445514  Agent  Digarda  Magalatera, Colombia  1.0  -73.3  1.0  0.0	RIMMA0390	PI 444254		Comun	Caldas, Colombia	4.5	-75.6	353	USDA
RIMMAB398  PI 444473	RIMMA0391	PI 444296		Andaqui	Caqueta, Colombia	1.4	-75.8	700	USDA
RIMMA095	RIMMA0392	PI 444309		Andaqui	Caqueta, Colombia	1.8	-75.6	555	USDA
RIMMA0395	RIMMA0393	PI 444473		Costeno	Cordoba, Colombia	8.3	-75.2	100	USDA
RIMMA0396	RIMMA0394	PI 444621		Pira	Cundinamarca, Colombia	4.8	-74.7	1000	USDA
RIMMA0397	RIMMA0395	PI 444731		Negrito	Choco, Colombia	8.5	-77.3	30	USDA
RIMMA0398	RIMMA0396	PI 444834		Caqueteno	Huila, Colombia	2.6	-75.3	1100	USDA
RIMMA0499	RIMMA0397	PI 444897		Negrito	Magdalena, Colombia	11.6	-72.9	50	USDA
RIMMA0404	RIMMA0398	PI 444923		Puya	Magdalena, Colombia	9.4	-75.7	27	USDA
RIMMA0406	RIMMA0399	PI 444954		Cariaco	Magdalena, Colombia	10.2	-74.1	250	USDA
RIMMA0406	RIMMA0403	PI 445163		Pira Naranja	Narino, Colombia	1.3	-77.5	1000	USDA
RIMMA0406	RIMMA0404	PI 445322		Puya Grande	Norte de Santander, Colombia	7.3	-72.5	1500	USDA
RIMMA0407	RIMMA0405	PI 445355		Puya	Norte de Santander, Colombia	8.4	-73.3	1100	USDA
RIMMA0428   PI 485354   Aleman   Huanuco, Peru   -9.3   -7.6   70.0   NA   NA   RIMMA0462   PI 444073   -7.2   17.00   USDA   RIMMA0690   PI 444946   -7.2   Puya   Magdalena, Colombia   8.3   -7.3   25.0   Goodman   RIMMA0690   PI 445931   Cacao   Santander, Colombia   8.3   -7.3   10.98   NA   RIMMA0707   PI 487930   Tuxpeno   Ecuador   -1.1   -8.0   30   Goodman   RIMMA0708   PI 488376   Yunquillan F Andaqui   Ecuador   -3.5   -7.8   10.98   Goodman   RIMMA0426   PI 485151   South America   Rabo de Zorro   Ancash, Peru   -9.1   -7.7   25.0   NA   RIMMA0430   PI 485362   Highland   Sarco   Ancash, Peru   -9.2   -7.7   25.0   NA   RIMMA0430   PI 54723   Morocho Cajabambino   Ancash, Peru   -9.2   -7.7   25.0   NA   RIMMA0431   PI 54752   Ancashino   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0438   PI 544893   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514890   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514809   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514809   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0446   PI 571438   Chullpi   Huanuce, Peru   -8.5   -7.7   25.0   NA   RIMMA0466   PI 571438   Chullpi   Huancevelica, Peru   -12.3   -7.4   1800   USDA   RIMMA0466   PI 571577   Confite Puneno   Apurimac, Peru   -12.3   -7.4   1800   USDA   RIMMA0466   PI 571871   Paro   Apurimac, Peru   -14.3   -7.2   3150   USDA   RIMMA0466   PI 571871   Sabanero   Narino, Colombia   1.1   -7.7   3150   USDA   RIMMA0466   NS 28691   Culli   Jujux, Agentina   -23.2   -65.4   -23.7   Goodman   RIMMA0657   NSL 28691   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0667   PI 48102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   Ecuador	RIMMA0406	PI 445514		Yucatan	Tolima, Colombia	5.0	-74.9	450	USDA
RIMMA0428   PI 485354   Aleman   Huanuco, Peru   -9.3   -7.6   70.0   NA   NA   RIMMA0462   PI 444073   -7.2   17.00   USDA   RIMMA0690   PI 444946   -7.2   Puya   Magdalena, Colombia   8.3   -7.3   25.0   Goodman   RIMMA0690   PI 445931   Cacao   Santander, Colombia   8.3   -7.3   10.98   NA   RIMMA0707   PI 487930   Tuxpeno   Ecuador   -1.1   -8.0   30   Goodman   RIMMA0708   PI 488376   Yunquillan F Andaqui   Ecuador   -3.5   -7.8   10.98   Goodman   RIMMA0426   PI 485151   South America   Rabo de Zorro   Ancash, Peru   -9.1   -7.7   25.0   NA   RIMMA0430   PI 485362   Highland   Sarco   Ancash, Peru   -9.2   -7.7   25.0   NA   RIMMA0430   PI 54723   Morocho Cajabambino   Ancash, Peru   -9.2   -7.7   25.0   NA   RIMMA0431   PI 54752   Ancashino   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0438   PI 544893   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514890   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514809   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0439   PI 514809   Maranon   Ancash, Peru   -9.3   -7.7   25.0   NA   RIMMA0446   PI 571438   Chullpi   Huanuce, Peru   -8.5   -7.7   25.0   NA   RIMMA0466   PI 571438   Chullpi   Huancevelica, Peru   -12.3   -7.4   1800   USDA   RIMMA0466   PI 571577   Confite Puneno   Apurimac, Peru   -12.3   -7.4   1800   USDA   RIMMA0466   PI 571871   Paro   Apurimac, Peru   -14.3   -7.2   3150   USDA   RIMMA0466   PI 571871   Sabanero   Narino, Colombia   1.1   -7.7   3150   USDA   RIMMA0466   NS 28691   Culli   Jujux, Agentina   -23.2   -65.4   -23.7   Goodman   RIMMA0657   NSL 28691   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0667   PI 48102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   -17.5   -65.7   29.0   Goodman   RIMMA0666   PI 488102   Uchaguilla   Bolivia   Ecuador	RIMMA0407	PI 445528		Pira	Tolima, Colombia	4.2	-74.9	450	USDA
RIMMA0600  P1 444946  Puya  Magdalena, Colombia  8.3  -73.6  250  Goodman    RIMMA0691  P1 445391  Cacao  Santander, Colombia  6.6  -73.1  1098  NA    RIMMA0707  P1 487930  Tuxpeno  Ecuador  -1.1  -80.5  30  Goodman    RIMMA0430  P1 4883161  South America  Rabo de Zorro  Ancash, Peru  -9.1  -77.8  2500  NA    RIMMA0430  P1 483362  Highland  Sacro  Ancash, Peru  -9.2  -77.1  2585  NA    RIMMA0431  P1 487363  (Andean)  Perlilla  Huanuco, Peru  -8.7  -77.1  2500  NA    RIMMA0436  P1 514723  Morocho Cajabambino  Ameash, Peru  -9.3  -77.6  2688  NA    RIMMA0437  P1 514782  Maranon  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0464  P1 571487  Hual  Mulpi  Huanca  Piura, Peru  -8.7  -77.2	RIMMA0428	PI 485354		Aleman		-9.3	-76.0	700	NA
RIMMA0707   PI 487930   Tuxpeno   Ecuador   1.11   -80.5   30   Goodman   RIMMA0708   PI 488796   Tuxpeno   Ecuador   -3.5   -78.6   1098   Goodman   RIMMA0708   PI 488376   Yunquillano F Andaqui   Ecuador   -3.5   -78.6   1098   Goodman   RIMMA0420   PI 488151   South America   Rabo de Zorro   Ancash, Peru   -9.1   -77.8   2500   NA   RIMMA0430   PI 485362   Highland   Sarco   Ancash, Peru   -9.1   -77.7   2585   NA   RIMMA0430   PI 514723   Highland   Sarco   Ancash, Peru   -8.7   -77.1   2900   NA   RIMMA0430   PI 514723   Ancash   Morocho Cajabambino   Ancash, Peru   -8.7   -77.1   2900   NA   RIMMA0430   PI 514752   Ancash   Morocho Cajabambino   Ancash, Peru   -8.7   -77.6   2688   NA   RIMMA0430   PI 514752   Ancash   Maranon   Ancash, Peru   -8.7   -77.4   2820   NA   RIMMA0430   PI 514969   Maranon   Ancash, Peru   -8.7   -77.2   2900   NA   RIMMA0440   PI 571438   Huarmaca   Piura, Peru   -8.5   -77.2   2900   NA   RIMMA04464   PI 571438   Huarmaca   Piura, Peru   -8.6   -79.5   2300   USDA   RIMMA0466   PI 571577   Ancash   Paro   Apurimac, Peru   -9.4   -77.2   3100   USDA   RIMMA0466   PI 571571   Paro   Apurimac, Peru   -9.4   -77.2   3150   USDA   RIMMA0466   PI 571871   Ancash   Paro   Apurimac, Peru   -9.4   -77.6   3104   USDA   RIMMA0467   PI 451148   Ancash   Paro   Apurimac, Peru   -9.4   -77.6   3104   USDA   RIMMA0467   PI 451145   Ancash   Paro   Apurimac, Peru   -9.4   -77.2   3150   USDA   RIMMA0466   PI 451145   Ancash   Paro   Apurimac, Peru   -9.4   -77.2   3150   USDA   RIMMA0466   PI 48166   Ancash   Pu 4816	RIMMA0462	PI 445073		Amagaceno	Narino, Colombia	1.6	-77.2	1700	USDA
RIMMA0707  PI 487930  Tuxpeno  Ecuador  -1.1  -80.5  30  Goodman    RIMMA0708  PI 488376  Yunquillano F Andaqui  Ecuador  -3.5  -78.6  1098  Goodman    RIMMA0420  PI 485151  South America  Rabo de Zorro  Ancash, Peru  -9.1  -77.8  2500  NA    RIMMA0430  PI 485362  Highland  Sarco  Ancash, Peru  -9.2  -77.7  2585  NA    RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -6.2  -77.9  2200  NA    RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9.3  -77.4  2820  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571475  Maranon  Au La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0465  PI 571475  Confite Puneno  Apurimac, Peru  -12.3  -74.7  1800  USDA	RIMMA0690	PI 444946		Puya	Magdalena, Colombia	8.3	-73.6	250	Goodman
RIMMA0708  PI 488376  Yunquillano F Andaqui  Ecuador  -3.5  -78.6  1098  Goodman    RIMMA0426  PI 485151  South America  Rabo de Zorro  Ancash, Peru  -9.1  -77.8  2500  NA    RIMMA0430  PI 485362  Highland  Sarco  Ancash, Peru  -9.2  -77.7  2585  NA    RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -8.7  -77.1  2900  NA    RIMMA0437  PI 514752  Morocho Cajabambino  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0438  PI 514752  Maranon  Ancash, Peru  -8.5  -77.2  2900  NA    RIMMA0439  PI 514899  Maranon  La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571475  Chullpi  Huarmaca  Piura, Peru  -12.3  -74.7  1800  USDA    RIMMA0468  PI 571877  Confite Puneno  Apurimac, Peru  -13.6  -72.9  2800<	RIMMA0691	PI 445391		Cacao	Santander, Colombia	6.6	-73.1	1098	NA
RIMMA0426  PI 485151  South America  Rabo de Zorro  Ancash, Peru  -9.1  -77.8  2500  NA    RIMMA0430  PI 485362  Highland  Sarco  Ancash, Peru  -9.2  -77.7  2585  NA    RIMMA0431  PI 485363  (Andean)  Perlilla  Huanuco, Peru  -8.7  -77.1  2900  NA    RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -6.2  -77.9  2200  NA    RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.5  -77.4  2820  NA    RIMMA0446  PI 571438  Chullpi  Huancavelica, Peru  -8.5  -77.2  2900  NSA    RIMMA0465  PI 571871  Paro  Apurimac, Peru  -16.6  -79.5  2300  USDA    RIMMA0466  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA	RIMMA0707	PI 487930		Tuxpeno	Ecuador	-1.1	-80.5	30	Goodman
RIMMA0430  PI 485362  Highland  Sarco  Ancash, Peru  -9.2  -77.7  2585  NA    RIMMA0431  PI 485363  (Andean)  Perlilla  Huanuco, Peru  -8.7  -77.1  2900  NA    RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -6.2  -77.9  2200  NA    RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.7  -77.4  2820  NA    RIMMA0469  PI 571438  Chullpi  Huancavelica, Peru  -8.5  -77.2  2900  NA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571871  Paro  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0468 </th <th>RIMMA0708</th> <th>PI 488376</th> <th></th> <th>Yunquillano F Andaqui</th> <th>Ecuador</th> <th>-3.5</th> <th>-78.6</th> <th>1098</th> <th>Goodman</th>	RIMMA0708	PI 488376		Yunquillano F Andaqui	Ecuador	-3.5	-78.6	1098	Goodman
RIMMA0431  PI 485363  (Andean)  Perlilla  Huanuco, Peru  -8.7  -77.1  2900  NA    RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -6.2  -77.9  2200  NA    RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.7  -77.2  2900  NA    RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571871  Paro  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3150  USDA    RIMMA0657	RIMMA0426	PI 485151	South America	Rabo de Zorro	Ancash, Peru	-9.1	-77.8	2500	NA
RIMMA0436  PI 514723  Morocho Cajabambino  Amazonas, Peru  -6.2  -77.9  2200  NA    RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9.3  -77.6  2688  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.7  -77.4  2820  NA    RIMMA0439  PI 514969  Maranon  La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -14.3  -72.9  2800  USDA    RIMMA0473  PI 45114  Sabanero  Nacian, Peru  -9.4  -77.2  3150  USDA    RIMMA0658  PI 571960  Sarco  Ancaino, Colombia  1.1  -77.6  310  USDA    RIMMA0656  Ames 28799	RIMMA0430	PI 485362	Highland	Sarco	Ancash, Peru	-9.2	-77.7	2585	NA
RIMMA0437  PI 514752  Ancashino  Ancash, Peru  -9,3  -77.6  2688  NA    RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.7  -77.4  2820  NA    RIMMA0439  PI 514969  Maranon  La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571577  Confite Puneno  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594	RIMMA0431	PI 485363	(Andean)	Perlilla	Huanuco, Peru	-8.7	-77.1	2900	NA
RIMMA0438  PI 514809  Maranon  Ancash, Peru  -8.7  -77.4  2820  NA    RIMMA0439  PI 514969  Maranon  La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571871  Confite Puneno  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 57180  Sarco  Ancash, Peru  -13.6  -72.9  2800  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0668  PI 48806	RIMMA0436	PI 514723		Morocho Cajabambino	Amazonas, Peru	-6.2	-77.9	2200	NA
RIMMA0439  PI 514969  Maranon  La Libertad, Peru  -8.5  -77.2  2900  NA    RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571871  Paro  Apurimac, Peru  -14.3  -72.9  2800  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0473  PI 445114  Sabanero  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0668  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0660  PI 488102	RIMMA0437	PI 514752		Ancashino	Ancash, Peru	-9.3	-77.6	2688	NA
RIMMA0464  PI 571438  Chullpi  Huancavelica, Peru  -12.3  -74.7  1800  USDA    RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571577  Confite Puneno  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0668  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0663  PI 488102	RIMMA0438	PI 514809		Maranon	Ancash, Peru	-8.7	-77.4	2820	NA
RIMMA0465  PI 571457  Huarmaca  Piura, Peru  -5.6  -79.5  2300  USDA    RIMMA0466  PI 571577  Confite Puneno  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0668  PI 488066  Chillo  Ecuador  -29.9  -78.7  2195  Goodman    RIMMA0662  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0665  PI 489324	RIMMA0439	PI 514969		Maranon	La Libertad, Peru	-8.5	-77.2	2900	NA
RIMMA0466  PI 571577  Confite Puneno  Apurimac, Peru  -14.3  -72.9  3600  USDA    RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0668  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 488113 <t< th=""><th>RIMMA0464</th><th>PI 571438</th><th></th><th>Chullpi</th><th>Huancavelica, Peru</th><th>-12.3</th><th>-74.7</th><th>1800</th><th>USDA</th></t<>	RIMMA0464	PI 571438		Chullpi	Huancavelica, Peru	-12.3	-74.7	1800	USDA
RIMMA0467  PI 571871  Paro  Apurimac, Peru  -13.6  -72.9  2800  USDA    RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Rac	RIMMA0465	PI 571457		Huarmaca	Piura, Peru	-5.6	-79.5	2300	USDA
RIMMA0468  PI 571960  Sarco  Ancash, Peru  -9.4  -77.2  3150  USDA    RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 489324  Racimo de Uva  Ecuador  0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo<	RIMMA0466	PI 571577		Confite Puneno	Apurimac, Peru	-14.3	-72.9	3600	USDA
RIMMA0473  PI 445114  Sabanero  Narino, Colombia  1.1  -77.6  3104  USDA    RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 489324  Racimo de Uva  Ecuador  0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0467	PI 571871		Paro	Apurimac, Peru	-13.6	-72.9	2800	USDA
RIMMA0656  Ames 28799  Culli  Jujuy, Argentina  -23.2  -65.4  2287  Goodman    RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 489324  Racimo de Uva  Ecuador  0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0468	PI 571960		Sarco	Ancash, Peru	-9.4	-77.2	3150	USDA
RIMMA0657  NSL 286594  Chake Sara  Bolivia  -17.5  -65.7  2201  Goodman    RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 48913  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0473	PI 445114		Sabanero	Narino, Colombia	1.1	-77.6	3104	USDA
RIMMA0658  NSL 286812  Uchuquilla  Bolivia  -21.8  -64.1  1948  Goodman    RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 489113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0656	Ames 28799		Culli	Jujuy, Argentina	-23.2	-65.4	2287	Goodman
RIMMA0661  PI 488066  Chillo  Ecuador  -2.9  -78.7  2195  Goodman    RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 488113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0657	NSL 286594		Chake Sara	Bolivia	-17.5	-65.7	2201	Goodman
RIMMA0662  NSL 287008  Cuzco  Ecuador  0.0  -78.0  2195  Goodman    RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 488113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0658	NSL 286812		Uchuquilla	Bolivia	-21.8	-64.1	1948	Goodman
RIMMA0663  PI 488102  Mishca  Ecuador  0.4  -78.2  2067  Goodman    RIMMA0664  PI 488113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0661	PI 488066		Chillo	Ecuador	-2.9	-78.7	2195	Goodman
RIMMA0664  PI 488113  Blanco Blandito  Ecuador  0.4  -78.4  2122  Goodman    RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0662	NSL 287008		Cuzco	Ecuador	0.0	-78.0	2195	Goodman
RIMMA0665  PI 489324  Racimo de Uva  Ecuador  -0.9  -78.9  2931  Goodman    RIMMA0667  Ames 28737  Patillo  Chuquisaca, Bolivia  -21.8  -64.1  2201  NA	RIMMA0663	PI 488102		Mishca	Ecuador	0.4	-78.2	2067	Goodman
RIMMA0667 Ames 28737 Patillo Chuquisaca, Bolivia -21.8 -64.1 2201 NA	RIMMA0664	PI 488113		Blanco Blandito	Ecuador	0.4	-78.4	2122	Goodman
•	RIMMA0665	PI 489324		Racimo de Uva	Ecuador	-0.9	-78.9	2931	Goodman
RIMMA0668 Ames 28668 Granada Puno, Peru -14.9 -70.6 3925 Goodman	RIMMA0667	Ames 28737		Patillo	Chuquisaca, Bolivia	-21.8	-64.1	2201	NA
	RIMMA0668	Ames 28668		Granada	Puno, Peru	-14.9	-70.6	3925	Goodman

<sup>&</sup>lt;sup>a</sup> GBS data are available for the accessions in bold font.

#### Supplemental Table 2 Inference of demographic parameters

Mexico	Model I			
	Likelihood	-3050.84		
	$\alpha$	0.99		
	$\beta$	0.42		
	$\gamma$	1		
	$\sigma$	1		
South America	Model I			
	Likelihood	-2737.80		
	$\alpha$	0.6		
	$\beta$	0.97		
	$\gamma$	≥55		
	$\sigma$	1		

The description of  $\alpha$ ,  $\beta$  and  $\gamma$  is in Figure 3.  $\sigma$  is a relative size of  $N_B$  to  $N_C$  ( $N_B = \sigma N_C$ ).

#### Supplemental Table 3 ms command

Model I for Mexico populations

Population 1: Mexico lowland population

Population 2: Mexico highland population

-l 2  $n_{m1} \ n_{m2}$  -n 1 0.3496 -n 2 0.5704 -ej 0.01 2 1 -en 0.01 1 0.92 -en 0.0133 1 0.0163 -en 0.015 1 1.0

Model II for Mexico populations

Population 1: Mexico lowland population

Population 2: Mexico highland population

Population 3: mexicane population

 $-1\,2\,n_{m1}\,n_{m2}\,-n\,1\,1.125\,-n\,2\,0.375\,-\text{es}\,0.01\,2\,0.8\,-\text{en}\,0.01\,3\,1.0667\,-\text{ej}\,0.01\,2\,1\,-\text{en}\,0.01\,1\,1.5\,-\text{en}\,0.0133\,1\,0.0163\,-\text{en}\,0.015\,1\,1.0\,-\text{ej}\,0.1\,3\,1.0667\,-\text{ej}\,0.01\,2\,1\,-\text{en}\,0.01\,1\,1.5\,-\text{en}\,0.0133\,1\,0.0163\,-\text{en}\,0.015\,1\,1.0\,-\text{ej}\,0.1\,3\,1.0667\,-\text{ej}\,0.01\,2\,1\,-\text{en}\,0.01\,1\,1.5\,-\text{en}\,0.0133\,1\,0.0163\,-\text{en}\,0.015\,1\,1.0\,-\text{ej}\,0.1\,3\,1.0667\,-\text{ej}\,0.01\,2\,1\,-\text{en}\,0.01\,1\,1.5\,-\text{en}\,0.0133\,1\,0.0163\,-\text{en}\,0.015\,1\,1.0\,-\text{ej}\,0.1\,3\,1.0667\,-\text{ej}\,0.01\,2\,1\,-\text{en}\,0.01\,1\,1.5\,-\text{en}\,0.0133\,1\,0.0163\,-\text{en}\,0.015\,1\,1.0\,-\text{ej}\,0.1\,3\,1.0667\,-\text{ej}\,0.01\,2\,$ 

Model I for SA populations

Population 1: SA lowland population

Population 2: SA highland population

 $-1\ 2\ n_{s1}\ n_{s2}\ -\text{n}\ 1\ 0.5335\ -\text{n}\ 2\ 0.99\ -\text{g}\ 2\ 614.1517\ -\text{ej}\ 0.006667\ 2\ 1\ -\text{eg}\ 0.006667\ 2\ 0.0\ -\text{en}\ 0.00667\ 1\ 0.55\ -\text{en}\ 0.01333\ 1\ 0.0163\ -\text{en}\ 0.015\ 1\ 1.0$ 

Model III for SA populations

Population 1: Mexico lowland population

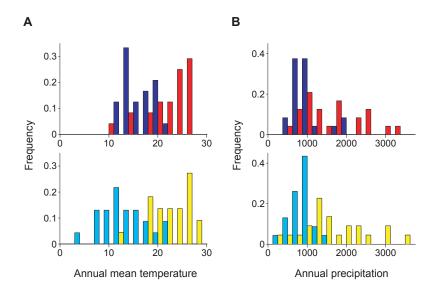
Population 2: SA lowland population

Population 3: SA highland population

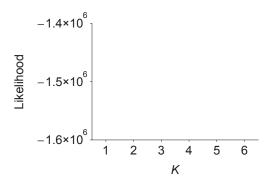
 $-1\,3\,n_{m1}\,n_{s1}\,n_{s2}\,-\mathsf{n}\,1\,0.64\,-\mathsf{n}\,2\,0.342\,-\mathsf{n}\,3\,0.99\,-\mathsf{g}\,3\,601.1000\,-\mathsf{ej}\,0.006667\,3\,2\,-\mathsf{eg}\,0.006667\,3\,0.0\,-\mathsf{en}\,0.006667\,2\,0.36\,-\mathsf{ej}\,0.01\,2\,1\,0.00\,-\mathsf{ej}\,0.000667\,3\,0.0\,-\mathsf{ej}\,0.006667\,3\,0.0\,-\mathsf{ej}\,0.006667\,3\,0.0\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.0000\,-\mathsf{ej}\,0.006667\,0.00000\,-\mathsf{ej}\,0.0000000000000$ 

-en 0.01 1 1 -en 0.0133 1 0.0163 -en 0.015 1 1.0

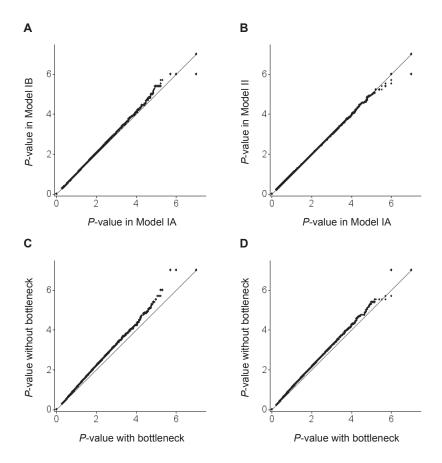
Sample size of Mexico lowland, Mexico highland, SA lowland and SA highland populations are denoted by  $n_{m1}$ ,  $n_{m2}$ ,  $n_{s1}$  and  $n_{s2}$ , respectively.



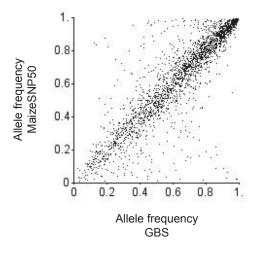
**Supplemental Figure 1** Correlation of allele frequencies between GBS (x-axes) and MaizeSNP50 (y-axes) data. We used overlapped SNPs with  $n \geq 40$  for both data sets. Correlation coefficient is 0.890 ( $P < 10^{-5}$  by permutation test with  $10^5$  replications).



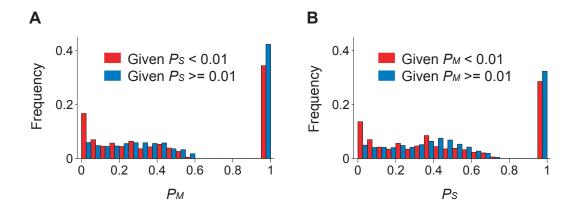
**Supplemental Figure 2** Likelihood of STRUCTURE analysis given K. The x-axes represents K and the y-axes represents likelihood.



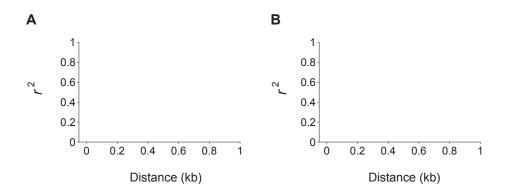
**Supplemental Figure 3** Q-Q plot for  $-\log_{10}$ -scaled *P*-values of population differentiation between lowland and highland populations. (A) Model IA  $\nu.s.$  Model IB in Mexico, (B) Model IA  $\nu.s.$  Model II in S. America, (C) Model with  $\nu.s.$  without bottleneck in Mexico and (D) Model with  $\nu.s.$  without bottleneck in S. America.



Supplemental Figure 4 Correlation of allele frequencies between GBS (x-axes) and MaizeSNP50 (y-axes) data. We used overlapped SNPs with  $n \geq 40$  for both data sets. Correlation coefficient is 0.890 ( $P < 10^{-5}$  by permutation test with  $10^5$  replications).



**Supplemental Figure 5** (A) Frequency distribution of  $P_M$  given  $P_S < 0.01$  and  $P_S \ge 0.01$ . (B) Frequency distribution of  $P_M$  given  $P_M < 0.01$  and  $P_M \ge 0.01$ .



**Supplemental Figure 6** Pattern of decay of linkage equilibrium in Mexico (A) and South America (B). Red and blue dots represent low- and highland population, respectively.  $r^2$  values were calculated as a statistics and averaged within 10-bp bins of distance between SNPs. The x- and y-axes represent distance between SNPs (kb) and average  $r^2$  values.