

Table S1. Pedigree information of Kenya Stem rust Observation Nursery, Cacuke and Robin wheat genotypes.

Genotype	GID	Pedigree	Selection history
KSRON 1	8235103	KENYA SUNBIRD/KACHU//KIDEA	CMSS13B00143S-099M-099NJ-099NJ-17Y-0WGY
KSRON 2	8235121	SUP152/KENYA SUNBIRD//KFA/2*KACHU	CMSS13B00156S-099M-099NJ-099NJ-15Y-0WGY
KSRON 3	8235123	SUP152/KENYA SUNBIRD//KFA/2*KACHU	CMSS13B00156S-099M-099NJ-099NJ-24Y-0WGY
KSRON 4	8235128	SUP152/KENYA SUNBIRD//KFA/2*KACHU	CMSS13B00156S-099M-099NJ-099NJ-53Y-0WGY
KSRON 5	8235228	CHEWINK #1/MUTUS//MUTUS*2/HARIL #1	CMSS13B00236S-099M-099NJ-099NJ-12Y-0WGY
KSRON 6	8235281	WBLL1*2/4/YACO/PBW65/3/KAUZ*2/TRAP//KAUZ*2/5/KIRITATI/2*TRCH/6/SWSR22T.B./2*BLOUK#1//WBLL1*2/KURUKU	CMSS13B00312S-099M-099NJ-099NJ-31Y-0WGY
KSRON 7	8235293	VILLA JUAREZ F2009//KIRITATI/2*TRCH/3/WBLL1*2/BRAMBLING/4/ATTILA*2/PBW65*2//MURGA	CMSS13B00313S-099M-099NJ-099NJ-46Y-0WGY
KSRON 8	8235301	VILLAJUAREZF2009//KIRITATI/2*TRCH/3/WBLL1*2/BRAMBLING/4/KFA/2*KACHU	CMSS13B00318S-099M-099NJ-099NJ-29Y-0WGY
KSRON 9	8235302	VILLAJUAREZ F2009//KIRITATI/2*TRCH/3/WBLL1*2/BRAMBLING/4/KFA/2*KACHU	CMSS13B00318S-099M-099NJ-099NJ-30Y-0WGY
KSRON 10	8235371	MUTUS*2/HARIL #1//ONIX/KBIRD	CMSS13B00332S-099M-099NJ-099NJ-1Y-0WGY
KSRON 11	8235422	KACHU//KIRITATI/2*TRCH/3/KFA/2*KACHU	CMSS13B00118S-099M-099NJ-099NJ-3Y-0WGY
KSRON 12	8235425	KACHU//KIRITATI/2*TRCH/3/KFA/2*KACHU	CMSS13B00118S-099M-099NJ-099NJ-11Y-0WGY
KSRON 13	8235458	FRNCLN*2//TAM200/TUI/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00347S-099M-099NJ-099NJ-1Y-0WGY
KSRON 14	8235460	FRNCLN*2//TAM200/TUI/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00347S-099M-099NJ-099NJ-4Y-0WGY
KSRON 15	8235480	WBLL1*2/BRAMBLING//TAM200/TUI/3/VILLAJUAREZF2009/4/SWSR22T.B./2*BLOUK#1//WBLL1*2/KURU	CMSS13B00363S-099M-099NJ-099NJ-5Y-0WGY
KSRON 16	8235504	WBLL1*2/BRAMBLING*2//BAVIS/3/KFA/2*KACHU	CMSS13B00378S-099M-099NJ-099NJ-1Y-0WGY
KSRON 17	8235518	WBLL1*2/BRAMBLING*2//BAVIS/3/KACHU #1/KIRITATI//KACHU	CMSS13B00377S-099M-099NJ-099NJ-30Y-0WGY
KSRON 18	8235553	SWSR22T.B./KACHU//2*KACHU/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00390S-099M-099NJ-099NJ-12Y-0WGY
KSRON 19	8235555	SWSR22T.B./KACHU//2*KACHU/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00390S-099M-099NJ-099NJ-17Y-0WGY
KSRON 20	8235560	SWSR22T.B./KACHU//2*KACHU/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00390S-099M-099NJ-099NJ-26Y-0WGY
KSRON 19	8235555	SWSR22T.B./KACHU//2*KACHU/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00390S-099M-099NJ-099NJ-17Y-0WGY

Table S1. Cont...

Genotype	GID	Pedigree	Selection history
KSRON 21	8235656	KRONSTAD F2004/KENYA SUNBIRD//WHEAR/KRONSTAD F2004/3/WBLL1*2/ BRAMBLING*2//BAVIS	CMSS13B00453S-099M-099NJ-099NJ- 24Y-0WGY
KSRON 22	8235663	BABAX/LR42//BABAX*2/3/PAVON 7S3, +LR47/4/KENYASUNBIRD/5/ BABAX/LR42//BABAX*2/3/PAVON7S3,+LR47/6/BORL14	CMSS13B00456S-099M-099NJ-099NJ- 13Y-0WGY
KSRON 23	8235716	KENYA SUNBIRD/2*KACHU//KFA/2*KACHU	CMSS13B00499S-099M-099NJ-099NJ- 28Y-0WGY
KSRON 24	8235793	BAVIS/NAVJ07//BORL14	CMSS13B00556S-099M-099NJ-099NJ- 12Y-0WGY
KSRON 25	8235802	BAVIS/NAVJ07//SUP152/BAJ #1	CMSS13B00557S-099M-099NJ-099NJ- 23Y-0WGY
KSRON 26	8235805	BETTY/3/CHEN/AE.SQ//2*OPATA/4/BAVIS/5/BORL14	CMSS13B00558S-099M-099NJ-099NJ-4Y- 0WGY
KSRON 27	8235936	BECARD//ND643/2*WBLL1/3/KACHU/DANPHE	CMSS13B00700S-099M-099NJ-099NJ-5Y- 0WGY
KSRON 28	8235972	ND643/2*WBLL1/3/KIRITATI//2*PRL/2*PASTOR/4/BECARD/5/KACHU/DANPHE	CMSS13B00725S-099M-099NJ-099NJ- 19Y-0WGY
KSRON 29	8235985	ATTILA/HEILO/3/KA/NAC//TRCH/4/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00745S-099M-099NJ-099NJ- 36Y-0WGY
KSRON 30	8236112	BOKOTA*2/3/PRL/2*PASTOR//DANPHE #1	CMSS13B01164T-099TOPY-099M-099NJ- 099NJ-6Y-0WGY
KSRON 31	8236219	KIRITATI/WBLL1//2*BLOUK #1*2/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B01210T-099TOPY-099M-099NJ- 099NJ-10Y-0WGY
KSRON 32	8236420	SUP152*2/MUU*2//SUP152/KENYA SUNBIRD	CMSS13B01303T-099TOPY-099M-099NJ- 099NJ-10Y-0WGY
KSRON 33	8236696	THELIN/3/BABAX/LR42//BABAX/4/BABAX/LR42//BABAX*2/5/KIRITATI /2*TRCH/6/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU /7/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B01554T-099TOPY-099M-099NJ- 099NJ-18Y-0WGY
KSRON 34	8236881	BECARD//KIRITATI/2*TRCH/3/BECARD/4/KACHU/KIRITATI/5/KACHU/DANPHE	CMSS13B01671T-099TOPY-099M-099NJ- 099NJ-32Y-0WGY
KSRON 35	8236893	WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1*2/4/KENYA SUNBIRD *2/5/ATTILA/3*BCN*2//BAV92/3/KIRITATI/WBLL1/4/DANPHE	CMSS13B01677T-099TOPY-099M-099NJ- 099NJ-25Y-0WGY
KSRON 36	8236991	KACHU*2/3/ND643//2*PRL/2*PASTOR/4/2*KACHU/DANPHE	CMSS13B01730T-099TOPY-099M-099NJ- 099NJ-6Y-0WGY
KSRON 37	8237041	CLEARFIELD JANZ/3/WHEAR/SOKOLL//ND643/2*WBLL1/4/BORL14	CMSS13B01777T-099TOPY-099M-099NJ- 099NJ-11Y-0WGY
KSRON 38	8237080	MISR 1/3/MUTUS//ND643/2*WBLL1	CMSS13Y00018S-099Y-099M-099NJ- 099NJ-13Y-0WGY
KSRON 39	8237230	KACHU/KIRITATI//KACHU/DANPHE	CMSS13Y00101S-099Y-099M-099NJ- 099NJ-10Y-0WGY
KSRON 40	8237252	KIRITATI/WBLL1//2*BLOUK #1/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00121S-099Y-099M-099NJ- 099NJ-1Y-0WGY

Table S1. Cont...,

Genotype	GID	Pedigree	Selection history
KSRON 41	8237259	FRNCLN*2/TECUE #1//KACHU/DANPHE	CMSS13Y00123S-099Y-099M-099NJ-099NJ-9Y-0WGY
KSRON 42	8237354	ATTILA/3*BCN*2//BAV92/3/KIRITATI/WBLL1/4/DANPHE/5/KACHU/DANPHE	CMSS13Y00152S-099Y-099M-099NJ-099NJ-17Y-0WGY
KSRON 43	8237365	CHIPAK//SUP152/KENYA SUNBIRD	CMSS13Y00164S-099Y-099M-099NJ-099NJ-5Y-0WGY
KSRON 44	8237372	CHIPAK/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00165S-099Y-099M-099NJ-099NJ-1Y-0WGY
KSRON 45	8237373	CHIPAK/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00165S-099Y-099M-099NJ-099NJ-8Y-0WGY
KSRON 46	8237483	BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/6/KACHU/DANPHE	CMSS13Y00251S-099Y-099M-099NJ-099NJ-12Y-0WGY
KSRON 47	8237524	SUP152*2/BECARD//KACHU/DANPHE	CMSS13Y00286S-099Y-099M-099NJ-099NJ-16Y-0WGY
KSRON 48	8237566	KACHU #1/3/T.DICOCCON PI94624/AE.SQUARROSA (409)//BCN/4/2*KACHU/5/SWSR22T.B./KACHU//2*KACHU	CMSS13Y00307S-099Y-099M-099NJ-099NJ-2Y-0WGY
KSRON 49	8237568	KACHU #1/3/T.DICOCCON PI94624/AE.SQUARROSA (409)//BCN/4/2*KACHU/5/SWSR22T.B./KACHU//2*KACHU	CMSS13Y00307S-099Y-099M-099NJ-099NJ-7Y-0WGY
KSRON 50	8237618	REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA (213)//PGO/4/HUITES/5/T.DICOCCON PI94624/AE.SQUARROSA (409)//BCN/6/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA (213)//PGO/4/HUITES/7/MUTUS/8/KFA/2*KACHU	CMSS13Y00346S-099Y-099M-099NJ-099NJ-16Y-0WGY
KSRON 51	8237655	BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/6/KFA/2*KACHU	CMSS13Y00391S-099Y-099M-099NJ-099NJ-6Y-0WGY
KSRON 52	8237743	SUP152/KENYA SUNBIRD/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00421S-099Y-099M-099NJ-099NJ-6Y-0WGY
KSRON 53	8237745	SUP152/KENYA SUNBIRD/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00421S-099Y-099M-099NJ-099NJ-17Y-0WGY
KSRON 54	8237953	SWSR22T.B./KACHU//2*KACHU/3/MUTUS*2//ND643/2*WBLL1	CMSS13Y00525S-099Y-099M-099NJ-099NJ-29Y-0WGY
KSRON 55	8238011	MUTUS*2//ND643/2*WBLL1/3/KACHU/DANPHE	CMSS13Y00496S-099Y-099M-099NJ-099NJ-8Y-0WGY
KSRON 56	8238198	KINGBIRD #1//INQALAB 91*2/TUKURU*2/3/BECARD/FRNCLN	CMSS13Y01077T-099TOPM-099Y-099M-099NJ-099NJ-3Y-0WGY
KSRON 57	8238251	KFA/2*KACHU/3/2*ATTILA*2/PBW65*2//MURGA	CMSS13Y01093T-099TOPM-099Y-099M-099NJ-099NJ-18Y-0WGY
KSRON 58	8239058	LONG REACH LINCOLN/3/2*PBW343*2/KUKUNA*2//FRTL/PIFED	CMSS13Y01490T-099TOPM-099Y-099M-099NJ-099NJ-25Y-0WGY
KSRON 59	8239077	MALBEC//2*FRNCLN*2/TECUE #1	CMSS13Y01506T-099TOPM-099Y-099M-099NJ-099NJ-21Y-0WGY

Table S1. Cont...

Genotype	GID	Pedigree	Selection history
KSRON 53	8237745	SUP152/KENYA SUNBIRD/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13Y00421S-099Y-099M-099NJ-099NJ-17Y-0WGY
KSRON 54	8237953	SWSR22T.B./KACHU//2*KACHU/3/MUTUS*2//ND643/2*WBLL1	CMSS13Y00525S-099Y-099M-099NJ-099NJ-29Y-0WGY
KSRON 55	8238011	MUTUS*2//ND643/2*WBLL1/3/KACHU/DANPHE	CMSS13Y00496S-099Y-099M-099NJ-099NJ-8Y-0WGY
KSRON 56	8238198	KINGBIRD #1//INQALAB 91*2/TUKURU*2/3/BECARD/FRNCLN	CMSS13Y01077T-099TOPM-099Y-099M-099NJ-099NJ-3Y-0WGY
KSRON 57	8238251	KFA/2*KACHU/3/2*ATTILA*2/PBW65*2//MURGA	CMSS13Y01093T-099TOPM-099Y-099M-099NJ-099NJ-18Y-0WGY
KSRON 58	8239058	LONG REACH LINCOLN/3/2*PBW343*2/KUKUNA*2//FRTL/PIFED	CMSS13Y01490T-099TOPM-099Y-099M-099NJ-099NJ-25Y-0WGY
KSRON 59	8239077	MALBEC//2*FRNCLN*2/TECUE #1	CMSS13Y01506T-099TOPM-099Y-099M-099NJ-099NJ-21Y-0WGY
KSRON 60	8240047	BAVIS #1//ND643/2*WBLL1/3/BOKOTA	CMSS14B00398S-099M-0SY-17M-0WGY
KSRON 61	8240063	BAVIS #1//ND643/2*WBLL1/3/BOKOTA	CMSS14B00398S-099M-0SY-72M-0WGY
KSRON 62	8240229	KACHU*2/3/ND643//2*PRL/2*PASTOR/4/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS14B00504S-099M-0SY-37M-0WGY
KSRON 63	8240320	KACHU*2/3/ND643//2*PRL/2*PASTOR/4/MUNAL*2//WESTONIA	CMSS14B00514S-099M-0SY-33M-0WGY
KSRON 64	8240347	WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1/4/HUW234+LR34/PRINIA//PBW343*2/KUKUNA/3/ROLF07/5/WBLL1*2/BRAMBLING*2//BAVIS	CMSS14B00535S-099M-0SY-23M-0WGY
KSRON 65	8240389	BECARD//WAXWING*2/KRONSTAD F2004/3/WBLL1*2/BRAMBLING/4/KACHU//	CMSS14B00567S-099M-0SY-12M-0WGY
KSRON 66	8240416	KIRITATI/2*TRCH PREMIO/2*BAVIS//BORL14	CMSS14B00581S-099M-0SY-51M-0WGY
KSRON 67	8240801	HD 2967/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS14B00894S-099M-0SY-20M-0WGY
KSRON 68	8241262	KACHU/BECARD//WBLL1*2/BRAMBLING*2/5/ATTILA/3*BCN*2//BAV92/3/KIRITATI/WBLL1/4/DANPHE	CMSS14B01373T-099TOPY-099M-0SY-37M-0WGY
KSRON 69	8241395	TUKURU//BAV92/RAYON/3/FRNCLN/4/2*BORL14	CMSS14B01401T-099TOPY-099M-0SY-14M-0WGY
KSRON 70	8241749	MUTUS*2//TAM200/TURACO*2/3/KFA/2*KACHU	CMSS14B01483T-099TOPY-099M-0SY-15M-0WGY
KSRON 69	8241395	TUKURU//BAV92/RAYON/3/FRNCLN/4/2*BORL14	CMSS14B01401T-099TOPY-099M-0SY-14M-0WGY

Table S1. Cont...,

Genotype	GID	Pedigree	Selection history
KSRON 70	8241749	MUTUS*2//TAM200/TURACO*2/3/KFA/2*KACHU	CMSS14B01483T-099TOPY-099M-0SY-15M-0WGY
KSRON 71	8241756	MUTUS*2//TAM200/TURACO*2/3/KFA/2*KACHU	CMSS14B01483T-099TOPY-099M-0SY-37M-0WGY
KSRON 72	8241760	MUTUS*2//TAM200/TURACO*2/3/KFA/2*KACHU	CMSS14B01483T-099TOPY-099M-0SY-44M-0WGY
KSRON 73	8241775	MUTUS*2//TAM200/TURACO*2/3/PRL/2*PASTOR*2//FH6-1-7	CMSS14B01484T-099TOPY-099M-0SY-11M-0WGY
KSRON 74	8241838	MUTUS*2//TAM200/TURACO*2/3/WBLL1*2/BRAMBLING*2//BAVIS	CMSS14B01486T-099TOPY-099M-0SY-52M-0WGY
KSRON 75	8241925	BAJ #1*2/TINKIO #1*2/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS14B01495T-099TOPY-099M-0SY-4M-0WGY
KSRON 76	8241926	BAJ #1*2/TINKIO #1*2/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS14B01495T-099TOPY-099M-0SY-5M-0WGY
KSRON 77	8241976	SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD/4/2*KACHU/3/WHEAR//2*PRL/2*PASTOR	CMSS14B01499T-099TOPY-099M-0SY-3M-0WGY
KSRON 78	8241987	SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD/4/2*KACHU/3/WHEAR//2*PRL/2*PASTOR	CMSS14B01499T-099TOPY-099M-0SY-39M-0WGY
KSRON 79	8241989	SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD/4/2*KACHU/3/WHEAR//2*PRL/2*PASTOR	CMSS14B01499T-099TOPY-099M-0SY-45M-0WGY
KSRON 80	8242186	FRANCOLIN #1*2//ND643/2*WBLL1/3/SWSR22T.B./2*BLOUK 1//WBLL1*2/KURUKU	CMSS14B01556T-099TOPY-099M-0SY-14M-0WGY
KSRON 81	8242341	KACHU*2/3/ND643//2*PRL/2*PASTOR*2/4/KFA/2*KACHU	CMSS14B01580T-099TOPY-099M-0SY-2M-0WGY
KSRON 82	8242502	WHEAR/KIRITATI/3/C80.1/3*BATAVIA//2*WBLL1/4/2*WBLL1*2/BRAMBLING/5/2*BOKOTA	CMSS14B01597T-099TOPY-099M-0SY-15M-0WGY
KSRON 83	8242660	PASTOR/HXL7573/2*BAU/3/WBLL1/4/SOKOLL/3/PASTOR/HXL7573/2*BAU/5/2*BORL14	CMSS14B01617T-099TOPY-099M-0SY-39M-0WGY
KSRON 84	8242982	KACHU/3/WHEAR//2*PRL/2*PASTOR*2/4/KACHU/KIRITATI	CMSS14B01674T-099TOPY-099M-0SY-7M-0WGY
KSRON 85	8243113	KAUZ//ALTAR 84/AOS/3/MILAN/KAUZ/4/SAUAL/5/SERI.1B//KAUZ/HEVO/3/AMAD*2/4/KIRITATI/6/BORL14/7/KACHU/SAUAL/4/ATTILA*2/PBW65//PIHA/3/ATTILA/2*PASTOR	CMSS14B01693T-099TOPY-099M-0SY-20M-0WGY
KSRON 86	8243117	KAUZ//ALTAR 84/AOS/3/MILAN/KAUZ/4/SAUAL/5/SERI.1B//KAUZ/HEVO/3/AMAD*2/4/KIRITATI/6/BORL14/7/KACHU/SAUAL/4/ATTILA*2/PBW65//PIHA/3/ATTILA/2*PASTOR	CMSS14B01693T-099TOPY-099M-0SY-38M-0WGY
KSRON 87	8243135	SAUAL/3/KAUZ/PASTOR/PBW343/4/CIRO16/5/COPIO/6/COPIO	CMSS14B01696T-099TOPY-099M-0SY-15M-0WGY
KSRON 88	8243372	PRL/2*PASTOR*2//FH6-1-7/3/KFA/2*KACHU	CMSS14Y00054S-099Y-099M-0SY-6M-0WGY
KSRON 89	8243375	PRL/2*PASTOR*2//FH6-1-7/3/KFA/2*KACHU	CMSS14Y00054S-099Y-099M-0SY-10M-0WGY

Table S1. Cont...,

Genotype	GID	Pedigree	Selection history
KSRON 90	8243376	PRL/2*PASTOR*2//FH6-1-7/3/KFA/2*KACHU	CMSS14Y00054S-099Y-099M-0SY-13M-0WGY
KSRON 91	8243498	KACHU//WBLL1*2/BRAMBLING/3/BORL14	CMSS14Y00110S-099Y-099M-0SY-9M-0WGY
KSRON 92	8243518	KACHU #1//WBLL1*2/KUKUNA/3/KFA/2*KACHU	CMSS14Y00112S-099Y-099M-0SY-19M-0WGY
KSRON 93	8243530	TUKURU//BAV92/RAYON/3/MUNAL #1/4/KFA/2*KACHU	CMSS14Y00114S-099Y-099M-0SY-10M-0WGY
KSRON 94	8244030	MUTUS*2//ND643/2*WBLL1/3/BORL14	CMSS14Y00242S-099Y-099M-0SY-3M-0WGY
KSRON 95	8244130	SHORTENED SR26 TRANSLOCATION/4/3*CHIBIA//PRLII/CM65531/3/MISR 2/5/ SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD	CMSS14Y00308S-099Y-099M-0SY-7M-0WGY
KSRON 96	8244200	MUTUS//KIRITATI/2*TRCH/3/WHEAR/KRONSTAD F2004/4/WBLL1*2/BRAMBLING *2//BAVIS	CMSS14Y00322S-099Y-099M-0SY-34M-0WGY
KSRON 97	8244205	MUTUS//KIRITATI/2*TRCH/3/WHEAR/KRONSTAD F2004/4/WBLL1*2/BRAMBLING *2//BAVIS	CMSS14Y00380S-099Y-099M-0SY-10M-0WGY
KSRON 98	8244206	MUTUS//KIRITATI/2*TRCH/3/WHEAR/KRONSTAD F2004/4/WBLL1*2/BRAMBLING *2//BAVIS	CMSS14Y00380S-099Y-099M-0SY-22M-0WGY
KSRON 99	8244595	SAUAL/3/KAUZ/PASTOR//PBW343/4/CIRO16/5/COPIO	CMSS14Y00380S-099Y-099M-0SY-26M-0WGY
KSRON 100	8244597	SAUAL/3/KAUZ/PASTOR//PBW343/4/CIRO16/5/COPIO	CMSS14Y00652S-099Y-099M-0SY-9M-0WGY
KSRON 101	8245002	KACHU/DANPHE*2//MUNAL #1	CMSS14Y00652S-099Y-099M-0SY-17M-0WGY
KSRON 102	8245003	KACHU/DANPHE*2//MUNAL #1	CMSS14Y01480T-099TOPM-099Y-099M-0SY-31M-0WGY
KSRON 103	8245010	KACHU/DANPHE*2//BORL14	CMSS14Y01480T-099TOPM-099Y-099M-0SY-33M-0WGY
KSRON 104	8245064	KACHU/DANPHE*2//KENYA SUNBIRD/KACHU	CMSS14Y01482T-099TOPM-099Y-099M-0SY-24M-0WGY
KSRON 105	8245069	KACHU/DANPHE*2//KENYA SUNBIRD/KACHU	CMSS14Y01492T-099TOPM-099Y-099M-0SY-24M-0WGY
KSRON 106	8245145	MUTUS//ND643/2*WBLL1*2/3/KFA/2*KACHU	CMSS14Y01492T-099TOPM-099Y-099M-0SY-39M-0WGY
KSRON 107	8245791	BAJ #1/3/KIRITATI//HUW234+LR34/PRINIA/4/KIRITATI//HUW234+LR34/PRINIA/5/ BECARD//ND643/2*WBLL1/6/BAJ #1*2/TINKIO #1	CMSS14Y01511T-099TOPM-099Y-099M-0SY-44M-0WGY
KSRON 108	8245874	MUTUS*2//TAM200/TURACO/3/KFA/2*KACHU/4/MUNAL*2/WESTONIA	CMSS14Y01685T-099TOPM-099Y-099M-0SY-12M-0WGY
KSRON 109	8246082	WBLL1*2/BRAMBLING*2//BAVIS*2/3/KFA/2*KACHU	CMSS14Y01703T-099TOPM-099Y-099M-0SY-48M-0WGY

Table S1. Cont...,

Genotype	GID	Pedigree	Selection history
KSRON 110	8246197	SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU/3/CLEARFIELD JANZ/4/SW	CMSS14Y01753T-099TOPM-099Y-099M-0SY-33M-0WGY
KSRON 111	8246417	SR22T.B./2*BLOUK #1//WBLL1*2/KURUKU CROSBILL #1/DANPHE/7/CNDO/R143//ENTE/MEXI_2/3/AEGILOPS SQUARROSA (TAUS)/4/WEAVER/5/2*KAUZ/6/PRL/2*PASTOR*2/8/BORL14	CMSS14Y01783T-099TOPM-099Y-099M-0SY-12M-0WGY
KSRON 113	8246426	CROSBILL #1/DANPHE/7/CNDO/R143//ENTE/MEXI_2/3/AEGILOPS SQUARROSA (TAUS)/4/WEAVER/5/2*KAUZ/6/PRL/2*PASTOR*2/8/BJY/COC//PRL/BOW/3/FRTL/4/BABAX/LR42//BABAX*2/3/SHAMA	CMSS14Y01837T-099TOPM-099Y-099M-0SY-29M-0WGY
KSRON 114	8246726	CHYAK1/PRL/4/WHEAR/KIRITATI/3/C80.1/3*BATAVIA//2*WBLL1/5/MUNAL//KIRITATI/2*TRCH/6/WBLL1*2/BRAMBLNG*2//BAVIS	CMSS14Y01902T-099TOPM-099Y-099M-0SY-7M-0WGY
KSRON 115	8246881	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1/5/DANPHE #1*2/6/KACHU//KIRITATI/2*TRCH	CMSS14Y01928T-099TOPM-099Y-099M-0SY-7M-0WGY
KSRON 116	8247116	PASTOR//HXL7573/2*BAU/3/WBLL1/4/1447/PASTOR//KRICHAUFF*2/5/MUNAL #1	CMSS14Y01963T-099TOPM-099Y-099M-0SY-16M-0WGY
KSRON 117	8247129	PASTOR//HXL7573/2*BAU/3/WBLL1/4/1447/PASTOR//KRICHAUFF*2/5/MISR 1	CMSS14Y01965T-099TOPM-099Y-099M-0SY-6M-0WGY
KSRON 118	8247181	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/PARUS/PASTOR/5/2*MUTUS//ND643/2*WBLL1	CMSS14Y01975T-099TOPM-099Y-099M-0SY-39M-0WGY
KSRON 119	8247263	SOKOLL/3/PASTOR//HXL7573/2*BAU/5/CROC_1/AE.SQUARROSA (205)//BORL95/3/PRL/SARA//TSI/VEE#5/4/FRET2*2/6/KACHU//KIRITATI/2*TRCH	CMSS14Y01984T-099TOPM-099Y-099M-0SY-19M-0WGY
KSRON 120	8247264	SOKOLL/3/PASTOR//HXL7573/2*BAU/5/CROC_1/AE.SQUARROSA (205)//BORL95/3/PRL/SARA//TSI/VEE#5/4/FRET2*2/6/KACHU//KIRITATI/2*TRCH	CMSS14Y01984T-099TOPM-099Y-099M-0SY-21M-0WGY
KSRON 121	8247345	WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1*2/4/NIINI #1/5/2*KACHU/DANPHE	CMSS14Y02012T-099TOPM-099Y-099M-0SY-37M-0WGY
KSRON 122	8247451	BECARD//ND643/2*WBLL1*2/3/KACHU/DANPHE	CMSS14Y02058T-099TOPM-099Y-099M-0SY-44M-0WGY
KSRON 123	8247807	KACHU/DANPHE//KENYA SUNBIRD/KACHU	CMSS13B00110S-099M-099NJ-099NJ-11Y-0RGY
KSRON 124	8247863	TUKURU//BAV92/RAYON/3/ND643/2*WBLL1/4/BORL14	CMSS13B00636S-099M-099NJ-099NJ-7Y-0RGY
KSRON 125	8247865	TUKURU//BAV92/RAYON/3/ND643/2*WBLL1/4/BORL14	CMSS13B00636S-099M-099NJ-099NJ-20Y-0RGY
KSRON 126	8247890	CHIBIA//PRLII/CM65531/3/FISCAL*2/4/NIINI #1/5/KACHU/DANPHE	CMSS13B00648S-099M-099NJ-099NJ-6Y-0RGY
KSRON 127	8247897	FRNCLN/BAVIS #1//FRANCOLIN #1/3/KACHU/DANPHE	CMSS13B00652S-099M-099NJ-099NJ-5Y-0RGY
KSRON 128	8247902	WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1*2/4/NIINI #1/5/KACHU/DANPHE	CMSS13B00654S-099M-099NJ-099NJ-1Y-0RGY
KSRON 129	8247943	BABAX/LR42//BABAX*2/3/SHAMA/4/WAXWING*2/KRONSTAD F2004/5/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00682S-099M-099NJ-099NJ-13Y-0RGY
KSRON 130	8247960	BECARD//ND643/2*WBLL1/3/KACHU/DANPHE	CMSS13B00700S-099M-099NJ-099NJ-24Y-0RGY

Table s1. Cont...

Genotype	GID	Pedigree	Selection history
KSRON 131	8247995	KACHU*2/3/ND643//2*PRL/2*PASTOR/4/SUP152/KENYA SUNBIRD	CMSS13B00715S-099M-099NJ-099NJ-35Y-0RGY
KSRON 132	8248188	KACHU #1//WBLL1*2/KUKUNA/3/BRBT1*2/KIRITATI*2/4/KACHU/KIRITATI	CMSS13B01468T-099TOPY-099M-099NJ-099NJ-37Y-0RGY
KSRON 133	8248215	KIRITATI//ATTILA*2/PASTOR/3/PVN/4/KIRITATI//2*ATTILA*2/PASTOR*2/5 KACHU/KIRITATI	CMSS13B01470T-099TOPY-099M-099NJ-099NJ-8Y-0RGY
KSRON 134	8248251	SWSR22T.B./KACHU//2*KACHU*2/5/WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1*2/4/NIINI #1	CMSS13B01611T-099TOPY-099M-099NJ-099NJ-3Y-0RGY
KSRON 135	8248300	CHIBIA//PRLII/CM65531/3/FISCAL*2/4/TAM200/TURACO*2/5/MUTUS//ND643/2*WBLL1	CMSS13B01697T-099TOPY-099M-099NJ-099NJ-15Y-0RGY
KSRON 136	8248306	MUTUS*2//ND643/2*WBLL1/3/2*SWSR22T.B./KACHU//2*KACHU	CMSS13B01701T-099TOPY-099M-099NJ-099NJ-6Y-0RGY
KSRON 137	8248464	WBLL1*2/BRAMBLING//WBLL1*2/SHAMA/3/WBLL1*2/BRAMBLING/4/MUU/FRNCLN//FRANCOLIN #1	CMSS13Y00374S-099Y-099M-099NJ-099NJ-11Y-0RGY
KSRON 138	8249240	NGL/4/PFAU/MILAN/3/BABAX/LR42//BABAX/5/KFA/2*KACHU	CMSS14Y00712S-099Y-099M-0SY-5M-0RGY
KSRON 139	8249303	SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU*2/5/CHIBIA//PRLII/CM65531/3/FISCAL*2/4/NIINI #1	CMSS14Y01772T-099TOPM-099Y-099M-0SY-19M-0RGY
KSRON 140	8249385	CHIBIA//PRLII/CM65531/3/FISCAL*2/4/NIINI #1/5/2*BORL14	CMSS14Y02004T-099TOPM-099Y-099M-0SY-6M-0RGY
KSRON 141	8050118	PRL/2*PASTOR*2//FH6-1-7*2/3/KFA/2*KACHU	CMSS12Y00787T-099TOPM-099Y-099M-099NJ-099NJ-1Y-0WGY
KSRON 142	8051231	FD06074/6/2*OASIS/5*BORL95/5/CNDO/R143//ENTE/MEXI75/3/AE.SQ/4/2*OCI	CMSS12Y01239T-099TOPM-099Y-099M-099NJ-099NJ-23Y-0WGY
KSRON 143	8046107	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1/5/ATTILA*2/PBW65*2//MURGA	CMSS12B00413S-099M-099NJ-099NJ-2Y-0WGY
KSRON 144	8056201	KACHU #1/3/T.DICOCCON PI94624/AE.SQUARROSA (409)//BCN/4/2*KACHU/5/SWSR22T.B./KACHU//2*KACHU	CMSS13Y00307S-099Y-099M-0SY-22M-0WGY
KSRON 145	8056569	THELIN/3/BABAX/LR42//BABAX/4/BABAX/LR42//BABAX*2/5/KIRITATI/2*TRCH/6/SWSR22T.B./2*BLOUK#1//WBLL1*2/KURUKU	CMSS13Y00466S-099Y-099M-0SY-26M-0WGY
KSRON 146	8231443	KATERE//KENYA SUNBIRD/2*KACHU	CMSS14B01123S-099M-099Y-3M-0WGY
KSRON 147	8233435	MELON//FILIN/MILAN/3/FILIN/8/NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/T.SPELTA PI348774/6/BACEU #1/7/WBLL1*2/4/YACO/PBW65/3/KAUZ*2/TRAP//KAUZ/9/KENYA SUNBIRD/KACHU/10/KENYASUNBIRD/KACHU	CMSS14Y01264T-099TOPM-099Y-099M-099Y-4M-0WGY
KSRON 148	7955575	KASUKO	CMSS11B00123S-099M-099NJ-099NJ-2RGY-0B-36M-0RGY
KSRON 149	7955598	KASUKO	CMSS11B00123S-099M-099NJ-099NJ-2RGY-0B-69M-0RGY
KSRON 150	8043601	FRNCLN//KIRITATI*2*TRCH/3/FRNCLN/4/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU	CMSS13B00732S-099M-0SY-7M-0RGY
KSRON 151	-	MUTUS*2/KINGBIRD #1/3/KSW/SAUAL//SAUAL	CMSS11B00495S-099M-099NJ-099NJ-14WGY-0M
KSRON 152	-	NELOKI//KFA/2*KACHU	CMSS12Y00044S-099Y-099M-0SY-16M-0WGY
KSRON 153	-	KUTZ//KFA/2*KACHU	CMSS12Y00120S-099Y-099M-0SY-41M-0WGY
KSRON 154	-	KACHU//WBLL1*2/BRAMBLING/3/KACHU/KIRITATI	CMSS12Y00241S-099Y-099M-0SY-9M-0WGY

Table S1. Cont...,

Genotype	GID	Pedigree	Selection history
KSRON 155	-	SAUAL/YANAC//SAUAL/3/2*KFA/2*KACHU	CMSS12Y00688T-099TOPM-099Y-099M-0SY-50M-0WGY
KSRON 156	-	SUP152/BAJ #1//KFA/2*KACHU	CMSS12B00146S-099M-0SY-26M-0WGY
KSRON 157	-	PRL/2*PASTOR*2//FH6-1-7*2/3/KFA/2*KACHU	CMSS12B00651T-099TOPY-099M-0SY-28M-0WGY
KSRON 158	-	CHIPAK*2/3/KSW/SAUAL//SAUAL	CMSS12B00794T-099TOPY-099M-0SY-39M-0WGY
KSRON 159	-	CHIPAK*2/3/KSW/SAUAL//SAUAL	CMSS12B00794T-099TOPY-099M-0SY-56M-0WGY
KSRON 160	-	KACHU//WBLL1*2/BRAMBLING*2/6/ROLF07*2/5/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA (213)//PGO/4/HUITES	CMSS12B00800T-099TOPY-099M-0SY-32M-0WGY
KSRON 161	-	MURGA/KRONSTAD F2004/3/SAUAL/YANAC//SAUAL/6/BABAX/LR42//BABAX*2/3/KUKUNA/4/CROSBILL #1/5/BECARD	CMSS12Y00760T-099TOPM-099Y-099M-099NJ-099NJ-8RGY-0B
KSRON 162	-	BECARD//ND643/2*WBLL1*2/3/KSW/SAUAL//SAUAL	CMSS12B00931T-099TOPY-099M-099NJ-099NJ-9RGY-0B
KSRON 163	-	WBLL1*2/BRAMBLING//WBLL1*2/SHAMA/3/WBLL1*2/BRAMBLING*2/4/KACHU	CMSS12B00991T-099TOPY-099M-0SY-39M-0RGY
KSRON 164	-	/KIRITATI	CMSS12B01153T-099TOPY-099M-099NJ-099NJ-3RGY-0B
KSRON 165	-	PREMIO//PI 610750/PIFED*2/3/KSW/SAUAL//SAUAL	ADVANCED LINES
KSRON 166	-	NJBW II/ R1115// NJBW II/ R1230	ADVANCED LINES
KSRON 167	-	BOUNTY/R1244// BOUNTY/R1130	ADVANCED LINES
KSRON 168	-	DUMA/R1278// DUMA	ADVANCED LINES
KSRON 169	-	CHIRIKU/R1115// CHIRIKU/R1122	ADVANCED LINES
KSRON 170	-	PASA/R1131//PASA/R1120	ADVANCED LINES
KSRON 171	-	BOUNTY/R1247	ADVANCED LINES
KSRON 172	-	K.IBIS/ R1256	ADVANCED LINES
KSRON 173	-	BOUNTY/R1247	ADVANCED LINES
*CACUKE	-	K.IBIS/ R1256	ADVANCED LINES
*ROBIN	-	CANADIAN/CUNNINGHAM//KENNEDY	Line
	-	BABAX/LR42//BABAX*2/3/TUKURU	Local variety

KSRON-Kenya stem rust observation nursery, GID-Genotype identification number, * Susceptible checks

Source: International Maize and Wheat Improvement Center (CIMMYT)