

JIC: Wheat Precise Genetic Stocks

Alien Introductions

The following list represents sets of stocks maintained within the Germplasm Resources Unit.

Advice on stock availability and their use is available through Adrian Turner

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The use of z in the chromosome column indicates 'unknown chromosome'.

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	Page 1 of 21
<i>Aegilops bicornis</i>					
Holdfast / <i>Aegilops bicornis</i> Additions					
3Sb			2190001	Riley R & Chapman V	GBE
3Sb			2190001	Riley R & Chapman V	GBE
7Sb			2190001	Riley R & Chapman V	GBE
7Sb			2190001	Riley R & Chapman V	GBE
Holdfast / <i>Aegilops bicornis</i> Substitutions					
3Sb	3A		2190001	Riley R & Chapman V	GBE
3Sb	3B		2190001	Riley R & Chapman V	GBE
3Sb	3D		2190001	Riley R & Chapman V	GBE
7Sb	7A		2190001	Riley R & Chapman V	GBE
7Sb	7B		2190001	Riley R & Chapman V	GBE
7Sb	7B		2190001	Riley R & Chapman V	GBE
7Sb	7B		2190001	Riley R & Chapman V	GBE
<i>Aegilops comosa</i>					
Avalon / <i>Aegilops comosa</i> Translocations					
2M	2D		2110001	Miller TE, Reader SM	GBE
Chinese Spring / <i>Aegilops comosa</i> Amphiploid					
			2110001	Miller TE & Reader SM	GBE
Chinese Spring / <i>Aegilops comosa</i> Additions					
2/7?M			2110001	Miller TE & Reader SM	GBE
2M			2110001	Miller TE & Reader SM	GBE
2M			2110001	Riley R & Chapman V	GBE
3?M			2110001	Miller TE & Reader SM	GBE
4?M			2110001	Miller TE & Reader SM	GBE
4?M			2110001	Miller TE & Reader SM	GBE
5?M			2110001	Miller TE & Reader SM	GBE

6?M	2110001	Miller TE & Reader SM	GBE	
6?M	2110001	Miller TE & Reader SM	GBE	
6?M	2110001	Miller TE & Reader SM	GBE	
7?M	2110001	Miller TE & Reader SM	GBE	
zM	2110001	Miller TE & Reader SM	GBE	
zM	2110001	Miller TE & Reader SM	GBE	
2M	2110001	Riley R & Chapman V	GBE	
3?M	2110001	Miller TE & Reader SM	GBE	
3?M	2110001	Miller TE & Reader SM	GBE	
6?M	2110001	Miller TE & Reader SM	GBE	
Chinese Spring / Aegilops comosa Substitutions				
6?M	6A	2110001	Miller TE & Reader SM	GBE

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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Chinese Spring / Aegilops comosa Translocations

zM 4D 2110001
zM 4D 2110001

Riley R & Chapman V GBE
Riley R & Chapman V GBE

Hobbit 'sib' / Aegilops comosa Additions

2M 2110001
2M 2110001

Miller TE GBE
Miller TE GBE

Hobbit 'sib' / Aegilops comosa Substitutions

2M 2D 2110001
2M 2D 2110001
2M 2D 2110001

Miller TE GBE
Miller TE, Reader SM & Singh D GBE
Miller TE GBE

Hobbit 'sib' / Aegilops comosa Translocations

2M 2A 2110001
2M 2A 2110001
2M 2D 2110001
2M 2D 2110001
2M 2D 2110001

Miller TE, Reader SM & Singh D GBE
Miller TE, Reader SM & Singh D GBE
Miller TE, Reader SM & Singh D GBE
Miller TE, Reader SM & Singh D GBE
Miller TE, Reader SM & Singh D GBE

Mercia / Aegilops comosa Translocations

2M 2D 2110001

Miller TE, Reader SM & Singh D GBE

Widgeon / Aegilops comosa Substitutions

2M 2D 2110001

Miller TE GBE

Aegilops crassa 4x

? / Aegilops crassa Translocations

zz z

Guira A ROM

Aegilops longissima

Chinese Spring / Aegilops longissima Amphiploid

2150011
2150011
2150011
2150011

Feldman M ISR
Feldman M ISR
Feldman M ISR
Feldman M ISR

Chinese Spring / Aegilops longissima Additions

4?SI
4SI
1?SI 2150012
2?SI 2150012
3?SI 2150012
4?SI 2150012
5?SI 2150012
zSI 2150012

Maan SS USA
Maan SS USA
Feldman M ISR
Feldman M ISR
Feldman M ISR
Feldman M ISR
Feldman M ISR

zSI 2150012

Chinese Spring / Aegilops longissima Substitutions

3SI 3BL 2150012

3SI 3BL 2150012

Aegilops mutica

Chinese Spring / Aegilops mutica Amphiploid

2130001

2130001

Feldman M

ISR

Zeller FJ

GER

Zeller FJ

GER

Riley R & Chapman V

GBE

Riley R & Chapman V

GBE

Alien chromosome Substituted chromosome
 Chromosome composition

Donor variety

Developer

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Chinese Spring / Aegilops mutica Additions

2?T	2130001	Miller TE & Reader SM	GBE
3?T	2130001	Miller TE & Reader SM	GBE
5?T	2130001	Miller TE & Reader SM	GBE
5?T	2130001	Dover GA	GBE
6?T	2130001	Miller TE & Reader SM	GBE
7?T	2130001	Miller TE & Reader SM	GBE
7?T	2130001	Dover GA	GBE
zT	2130001	Miller TE & Reader SM	GBE
zT	2130001	Miller TE & Reader SM	GBE
3?T	2130001	Miller TE & Reader SM	GBE
zT	2130001	Miller TE & Reader SM	GBE

Aegilops sharonensis

Brigand / Aegilops sharonensis Additions

4SI	2170001	King IP, Reader SM & Miller TE	GBE
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Brigand / Aegilops sharonensis Substitutions

4SI	4D	2170001	King IP, Reader SM & Miller TE	GBE
4SI	4D	2170001	King IP, Reader SM & Miller TE	GBE

Chinese Spring / Aegilops sharonensis Amphiploid

2170001	Miller TE, Hutchinson J & Chapman V	GBE
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Chinese Spring / Aegilops sharonensis Additions

2SI		Endo TR	JPN
1?SI	2170001	Miller TE	GBE
1?SI	2170001	Miller TE	GBE
3SI	2170001	Miller TE	GBE
3SI	2170001	Miller TE	GBE
4SI	2170001	Miller TE, Hutchinson J & Chapman V	GBE
5SI	2170001	Miller TE	GBE
6?SI	2170001	Miller TE	GBE
7SI	2170001	Miller TE	GBE
zSI	2170001	Miller TE	GBE
5SI	2170001	Miller TE	GBE
5SI	2170001	Miller TE	GBE
6?SI	2170001	Miller TE	GBE
5SI	2170001	Miller TE	GBE
5SI	2170001	Miller TE	GBE
1?SI	2170001	Miller TE	GBE
1?SI	2170001	Miller TE	GBE

1?SI		2170001
2?SI		2170001
4?SI		2170001
6?SI		2170001
zSI		2170001

Chinese Spring / Aegilops sharonensis Substitutions

2SI	2A	
2SI	2B	
2SI	2D	
4SI	4A	2170001

Miller TE	GBE
Miller TE	GBE
Miller TE	GBE
Miller TE	GBE
Miller TE	GBE

Endo TR	JPN
Endo TR	JPN
Endo TR	JPN
Miller TE, Hutchinson J & Chapman V	GBE

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	Page 4 of 21
4SI	4B		2170001	Miller TE, Hutchinson J & Chapman V	GBE
4SI	4D		2170001	Miller TE, Hutchinson J & Chapman V	GBE
Selkirk / Aegilops sharonensis Additions					
4SI				Maan SS	USA
<i>Aegilops sharonensis + Secale cereale</i>					
Chinese Spring Double Alien Additions					
2+5=2SI+5R				Miller TE & Reader SM	GBE
2+5=2SI+5R				Miller TE & Reader SM	GBE
2+5=2SI+5R				Miller TE & Reader SM	GBE
2+5=2SI+5R				Miller TE & Reader SM	GBE
2+5=2SI+5R				Miller TE & Reader SM	GBE
<i>Aegilops speltoides</i>					
Wembley / Aegilops speltoides Translocations					
zS	6A?		2140008	Miller TE, Reader SM, Ainsworth CC &	GBE
zS	6A?		2140008	Miller TE, Reader SM, Ainsworth CC &	GBE
<i>Aegilops triuncialis</i>					
Chinese Spring / Aegilops triuncialis Additions					
2SI				Endo TR	JPN
3C				Endo TR & Tsunewaki K	JPN
3C				Endo TR & Tsunewaki K	JPN
3C				Endo TR & Tsunewaki K	JPN
<i>Aegilops umbellulata</i>					
Chinese Spring / Aegilops umbellulata Amphiploid					
			2010001	Chapman V & Miller TE	GBE
Chinese Spring / Aegilops umbellulata Additions					
4U				Tuleen N	USA
1U				Kimber G	GBE
2U				Kimber G	GBE
2U				Kimber G	USA
4U				Tuleen N	USA
5U				Tuleen N	USA
7U				Tuleen N	USA
1U				Kimber G	GBE
1U				Kimber G	GBE
2U				Kimber G	GBE

5U
7U
7U
1U
2U
2U
4U
5U
6U
7U

2010001
2010001
2010001
2010001
2010001
2010001
2010001

Tuleen N
Tuleen N
Tuleen N
Kimber G
Kimber G
Kimber G
Kimber G
Kimber G
Kimber G
Kimber G

USA
GBE
USA
GBE
GBE
GBE
GBE
GBE
GBE
GBE

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
zU			2010001	Kimber G	USA
2U			2010001	Kimber G	GBE
2U			2010001	Kimber G	GBE
2U			2010001	Kimber G	GBE
zU			2010001	Kimber G	USA
2U			2010001	Kimber G	GBE
4U			2070008	Tuleen N	USA
Chinese Spring / Aegilops umbellulata Substitutions					
2U	2A		2010001	Riley R, Chapman V & Miller TE	GBE
5U	5B		2010001	Riley & Chapman	GBE
5U	5D		2010001	Riley R & Chapman V	GBE
Aegilops umbellulata + Ae sharonensis					
Chinese Spring Double Alien Substitutions					
1+4=1U+4SI	1D+4D		2010001 + 2170001	Rogers WJ, King IP & Miller TE	GBE
1+4=1U+4SI	1D+4D		2010001 + 2170001	Rogers WJ, King IP & Miller TE	GBE
Aegilops uniaristata					
Chinese Spring / Aegilops uniaristata Additions					
1?N			2120001	Miller TE & Reader SM	GBE
1N			2120001	Miller TE & Reader SM	GBE
2?N			2120001	Miller TE & Reader SM	GBE
2N			2120001	Miller TE & Reader SM	GBE
2N			2120001	Miller TE & Reader SM	GBE
3N			2120001	Miller TE & Reader SM	GBE
3N			2120001	Miller TE & Reader SM	GBE
3N			2120001	Miller TE & Reader SM	GBE
4+N			2120001	Miller TE & Reader SM	GBE
4+N			2120001	Miller TE & Reader SM	GBE
4+N			2120001	Miller TE & Reader SM	GBE
4+N			2120001	Miller TE & Reader SM	GBE
4N			2120001	Miller TE & Reader SM	GBE
5?N			2120001	Miller TE & Reader SM	GBE
5N			2120001	Miller TE & Reader SM	GBE
zN			2120001	Miller TE & Reader SM	GBE
zN			2120001	Miller TE & Reader SM	GBE
zN			2120001	Miller TE & Reader SM	GBE
Chinese Spring / Aegilops uniaristata Substitutions					
3N	3A		2120001	Miller TE & Reader SM	GBE

3N	3A	2120001	Miller TE & Reader SM	GBE
3N	3B	2120001	Miller TE & Reader SM	GBE
3N	3B	2120001	Miller TE & Reader SM	GBE
3N	3D	2120001	Miller TE & Reader SM	GBE
3N	3D	2120001	Miller TE & Reader SM	GBE

Chinese Spring / Aegilops uniaristata Translocation

3N	3A	2120001	Iqbal N & Miller TE	GBE
3N	3A	2120001	Iqbal N & Miller TE	GBE
3N	3A	2120001	Iqbal N & Miller TE	GBE
3N	3A	2120001	Iqbal N & Miller TE	GBE

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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3N	3A	2120001	Iqbal N & Miller TE	GBE
3N	3B	2120001	Miller TE & Reader SM	GBE
3N	3A	2120001	Iqbal N & Miller TE	GBE

Aegilops variabilis

Chinese Spring / *Aegilops variabilis* Additions

1U	2070008	Tuleen N	USA
2Sv	2070008	Tuleen N	USA
2U	2070008	Tuleen N	USA
3U	2070008	Tuleen N	USA
4Sv	2070008	Tuleen N	USA
4U	2070008	Tuleen N	USA
5Sv	2070008	Tuleen N	USA
5U	2070008	Tuleen N	USA
6U	2070008	Tuleen N	USA
7Sv	2070008	Tuleen N	USA
7U	2070008	Tuleen N	USA
6Sv	2070008	Tuleen N	USA
6Sv	2070008	Tuleen N	USA
1U	2070008	Tuleen N	USA
2Sv	2070008	Tuleen N	USA
2U	2070008	Tuleen N	USA
3Sv	2070008	Tuleen N	USA
3U	2070008	Tuleen N	USA
4Sv	2070008	Tuleen N	USA
4U	2070008	Tuleen N	USA
5Sv	2070008	Tuleen N	USA
5U	2070008	Tuleen N	USA
6Sv	2070008	Tuleen N	USA
6U	2070008	Tuleen N	USA
7Sv	2070008	Tuleen N	USA
1Sv	2070008	Tuleen N	USA
2Sv	2070008	Tuleen N	USA
3Sv	2070008	Tuleen N	USA
3U	2070008	Tuleen N	USA
4Sv	2070008	Tuleen N	USA
4U	2070008	Tuleen N	USA
5Sv	2070008	Tuleen N	USA
5U	2070008	Tuleen N	USA
5U	2070008	Tuleen N	USA

6Sv		2070008	Tuleen N	USA
7Sv		2070008	Tuleen N	USA
7U		2070008	Tuleen N	USA
6U		2070008	Tuleen N	USA
Chinese Spring / Aegilops variabilis Substitutions				
4U	6A	2070008	Tuleen N	USA
4U	6B	2070008	Tuleen N	USA
4U	6B	2070008	Tuleen N	USA
4U	6D	2070008	Tuleen N	USA

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
4U	6A		2070008	Tuleen N	USA
4U	6B		2070008	Tuleen N	USA
4U	6D		2070008	Tuleen N	USA

Aegilops ventricosa

Moisson / *Aegilops ventricosa* Additions

2?Mv?				Dosba F	FRA
5?Mv?				Dosba F	FRA
7?Mv?				Dosba F	FRA
zMv?				Dosba F	FRA
zMv?				Dosba F	FRA
zMv?				Dosba F	FRA

Dasypyrum villosum (Haynaldia villosa)

Chinese Spring / *Dasypyrum villosum* Additions

3V				Sears ER	USA
1V		5010005?		Sears ER	USA
2V		5010005?		Sears ER	USA
4V		5010005?		Sears ER	USA
5V		5010005?		Sears ER	USA
6V		5010005?		Sears ER	USA
7V		5010005?		Sears ER	USA
5V		5010005?		Sears ER	USA
2V		5010005?		Sears ER	USA

Chinese Spring / *Dasypyrum villosum* Translocations

3V	z			Sears ER	USA
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Creso / *Dasypyrum villosum* Additions

1V			Hv 17	Blanco A	ITA
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Hordeum chilense

Chinese Spring / *Hordeum chilense* Amphiploid

			4010001	Chapman V & Miller TE	GBE
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Chinese Spring / *Hordeum chilense* Additions

1Hch			4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch			4010001	Miller TE, Reader SM & Chapman V	GBE
3Hch			4010001	Miller TE, Reader SM & Chapman V	GBE
4Hch			4010001	Miller TE, Reader SM & Chapman V	GBE
5Hch			4010001	Miller TE, Reader SM & Chapman V	GBE
5Hch			4010001	Miller TE, Reader SM & Chapman V	GBE

6Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
7Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
zHch	4010001	Miller TE, Reader SM & Chapman V	GBE
zHch	4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch	4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch	4010001	Miller TE, Reader SM & Chapman V	GBE

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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4Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
2Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
2Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
5Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
5Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6?Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6?Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
7Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
zHch		4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
1Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
7Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
2Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
2Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
2Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
6Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
7Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
7Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
zHch		4010001	Miller TE, Reader SM & Chapman V	GBE
zHch		4010001	Miller TE, Reader SM & Chapman V	GBE
6?Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
zHch		4010001	Miller TE, Reader SM & Chapman V	GBE
5Hch		4010001	Miller TE, Reader SM & Chapman V	GBE
Chinese Spring / Hordeum chilense Substitutions				
1Hch	1A	4010001	Miller TE & Reader SM	GBE
1Hch	1A	4010001	Miller TE & Reader SM	GBE

1Hch	1A	4010001	Miller TE & Reader SM	GBE
1Hch	1A	4010001	Miller TE & Reader SM	GBE
1Hch	1B	4010001	Miller TE & Reader SM	GBE
1Hch	1B	4010001	Miller TE & Reader SM	GBE
1Hch	1B	4010001	Miller TE & Reader SM	GBE
4Hch	4A	4010001	Miller TE & Reader SM	GBE
4Hch	4A	4010001	Miller TE & Reader SM	GBE
4Hch	4B	4010001	Miller TE & Reader SM	GBE
4Hch	4B	4010001	Miller TE & Reader SM	GBE

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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4Hch	4B	4010001	Miller TE & Reader SM	GBE
4Hch	4D	4010001	Miller TE & Reader SM	GBE
4Hch	4D	4010001	Miller TE & Reader SM	GBE
5Hch	5A	4010001	Miller TE & Reader SM	GBE
5Hch	5A	4010001	Miller TE & Reader SM	GBE
5Hch	5A	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE
7Hch	7D	4010001	Miller TE & Reader SM	GBE
7Hch	7D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
4Hch	4B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE
7Hch	7D	4010001	Miller TE & Reader SM	GBE
7Hch	7D	4010001	Miller TE & Reader SM	GBE
1Hch	1B	4010001	Miller TE & Reader SM	GBE
2Hch	2D	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5B	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
5Hch	5D	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE
6Hch	6A	4010001	Miller TE & Reader SM	GBE

7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7A	4010001	Miller TE & Reader SM	GBE
7Hch	7B	4010001	Miller TE & Reader SM	GBE

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
7Hch	7B		4010001	Miller TE & Reader SM	GBE
7Hch	7D		4010001	Miller TE & Reader SM	GBE
7Hch	7D		4010001	Miller TE & Reader SM	GBE
7Hch	7D		4010001	Miller TE & Reader SM	GBE
2Hch	2D		4010001	Miller TE & Reader SM	GBE
2Hch	2D		4010001	Miller TE & Reader SM	GBE
2Hch	2D		4010001	Miller TE & Reader SM	GBE
4Hch	4B		4010001	Miller TE & Reader SM	GBE
5Hch	5A		4010001	Miller TE & Reader SM	GBE
5Hch	5B		4010001	Miller TE & Reader SM	GBE
7Hch	7D		4010001	Miller TE & Reader SM	GBE
Chinese Spring / Hordeum chilense Translocations					
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1B		4010001	Miller TE & Reader SM	GBE
1Hch	1BL		4010001	Miller TE & Reader SM	GBE
Hobbit 'sib' / Hordeum chilense Substitutions					
5Hch	5D		4010001	Chapman V & Miller TE	GBE
5Hch	5D		4010001	Miller TE & Reader SM	GBE
5Hch	5D		4010001	Miller TE & Reader SM	GBE
5Hch	5D		4010001	Chapman V & Miller TE	GBE
Moulin / Hordeum chilense Substitutions					
5Hch	5D		4010001	Miller TE & Reader SM	GBE
5Hch	5D		4010001	Chapman V & Miller TE	GBE
5Hch	5D		4010001	Chapman V & Miller TE	GBE
Hordeum vulgare					
Chinese Spring / Hordeum vulgare Additions					
2H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	
3H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	
4H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	
5H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	
6H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	

7H	'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	
2H	'Betzes'	Islam AKMR & Shepherd KW	AUS
3H	'Betzes'	Islam AKMR & Shepherd KW	AUS
4H	'Betzes'	Islam AKMR & Shepherd KW	AUS
5H	'Betzes'	Islam AKMR & Shepherd KW	AUS
6H	'Betzes'	Islam AKMR & Shepherd KW	AUS
2H	'Betzes'	Islam AKMR & Shepherd KW	AUS
3H	'Betzes'	Islam AKMR & Shepherd KW	AUS

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
4H			'Betzes'	Islam AKMR & Shepherd KW	AUS
5H			'Betzes'	Islam AKMR & Shepherd KW	AUS
6H			'Betzes'	Islam AKMR & Shepherd KW	AUS
7H			'Betzes'	Islam AKMR & Shepherd KW	AUS
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
zH			'Tuleen 346'	Miller TE & Reader SM	GBE
Chinese Spring / Hordeum vulgare Substitutions					
2H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
3H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
4H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
5H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
6H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
7H			'Betzes'	Islam AKMR, Shepherd KW & Sparrow DHBAUS	AUS
2H			'Betzes'	Islam AKMR & Shepherd KW	AUS
3H			'Betzes'	Islam AKMR & Shepherd KW	AUS
4H			'Betzes'	Islam AKMR & Shepherd KW	AUS
5H			'Betzes'	Islam AKMR & Shepherd KW	AUS
6H			'Betzes'	Islam AKMR & Shepherd KW	AUS
7H			'Betzes'	Islam AKMR & Shepherd KW	AUS
2H			'Betzes'	Islam AKMR & Shepherd KW	AUS
3H			'Betzes'	Islam AKMR & Shepherd KW	AUS
4H			'Betzes'	Islam AKMR & Shepherd KW	AUS
5H			'Betzes'	Islam AKMR & Shepherd KW	AUS
5H			'Betzes'	Islam AKMR & Shepherd KW	AUS
6H			'Betzes'	Islam AKMR & Shepherd KW	AUS
7H			'Betzes'	Islam AKMR & Shepherd KW	AUS
Secale cereale					
Chinese Spring / Secale cereale Amphiploids					
			'Imperial'	Sears ER	USA
			'King II'	Miller TE & Riley R	GBE
Chinese Spring / Secale cereale Additions					
6R			'Imperial'	Sears ER	USA

1R	'Imperial'	Sears ER	USA
2R	'Imperial'	Sears ER	USA
2R	'Imperial'	Sears ER	USA
2R	'Imperial'	Sears ER	USA
3R	'Imperial'	Sears ER	USA
4R	'Imperial'	Sears ER	USA
5R	'Imperial'	Sears ER	USA
6R	'Imperial'	Sears ER	USA
7R	'Imperial'	Sears ER	USA
7R	'Imperial'	Sears ER	USA

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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2R	'Imperial'	Miller TE	GBE
2R	'Imperial'	Miller TE	GBE
1R	'Imperial'	Miller TE	GBE
1R	'Imperial'	Sears ER	USA
1R	'Imperial'	Sears ER	USA
1R	'Imperial'	Miller TE	GBE
2R	'Imperial'	Sears ER	USA
2R	'Imperial'	Sears ER	USA
4R	'Imperial'	Sears ER	USA
4R	'Imperial'	Zeller FJ	GER
4R	'Imperial'	Zeller FJ	GER
4R	'Imperial'	Zeller FJ	GER
4R	'Imperial'	Zeller FJ	USA
5R	'Imperial'	Sears ER	GER
5R	'Imperial'	Sears ER	USA
5R	'Imperial'	Sears ER	USA
6R	'Imperial'	Miller TE	GBE
6R	'Imperial'	Sears ER	USA
6R	'Imperial'	Miller TE	GBE
7R	'Imperial'	Zeller FJ	USA
7R	'Imperial'	Zeller FJ	GER
7R	'Imperial'	Sears ER	USA
7R	'Imperial'	Sears ER	USA
1R	'Imperial'	Sears ER	USA
1R	'Imperial'	Sears ER	USA
1R	'Imperial'	Sears ER	USA
3R	'Imperial'	Sears ER	USA
3R	'Imperial'	Sears ER	USA
4R	'Imperial'	Sears ER	USA
4R	'Imperial'	Sears ER	USA
5R	'Imperial'	Sears ER	USA
5R	'Imperial'	Sears ER	USA
6R	'Imperial'	Miller TE	GBE
6R	'Imperial'	Miller TE	GBE
6R	'Imperial'	Miller TE	GBE
7R	'Imperial'	Zeller FJ	GER
7R	'Imperial'	Zeller FJ	GER
2R	'Imperial'	Miller TE	GBE
6R	'Imperial'	Miller TE	GBE
6R	'Imperial'	Miller TE	GBE

6R
1R
2R
2R
3R
4R
5R
6R

'Imperial'
'King II'
'King II'
'King II'
'King II'
'King II'
'King II'
'King II'

Miller TE
Miller TE
Miller TE
Miller TE
Miller TE
Miller TE
Miller TE
Miller TE

GBE
GBE
GBE
GBE
GBE
GBE
GBE
GBE

Holdfast / Secale cereale Amphiploid

'King II'

Miller TE & Riley R

GBE

Holdfast / Secale cereale Additions

1R

'King II'

Riley R & Chapman V

GBE

2R

'King II'

Riley R & Chapman V

GBE

3R

'King II'

Riley R & Chapman V

GBE

3R

'King II'

Miller TE & Reader SM

GBE

'King II'

Miller TE & Reader SM

GBE

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
4R			'King II'	Riley R & Chapman V	GBE
5R			'King II'	Riley R & Chapman V	GBE
6R			'King II'	Riley R & Chapman V	GBE
7R			'King II'	Riley R & Chapman V	GBE
2R			'King II'	Riley R & Chapman V	GBE
1R			'King II'	Riley R & Chapman V	GBE
2R			'King II'	Riley R & Chapman V	GBE
3R			'King II'	Miller TE & Reader SM	GBE
4R			'King II'	Riley R & Chapman V	GBE
5R			'King II'	Riley R & Chapman V	GBE
6R			'King II'	Riley R & Chapman V	GBE
7R			'King II'	Riley R & Chapman V	GBE
1R			'King II'	Riley R & Chapman V	GBE
2R			'King II'	Riley R & Chapman V	GBE
2R			'King II'	Riley R & Chapman V	GBE
2R			'King II'	Riley R & Chapman V	GBE
4R			'King II'	Riley R & Chapman V	GBE
5R			'King II'	Riley R & Chapman V	GBE
6R			'King II'	Riley R & Chapman V	GBE
7R			'King II'	Riley R & Chapman V	GBE
zR			'King II'	Riley R & Chapman V	GBE
3R			'King II'	Miller TE & Reader SM	GBE
3R			'King II'	Miller TE & Reader SM	GBE
Holdfast / Secale cereale Substitutions					
1R	1A		'King II'	Miller TE & Reader SM	GBE
2R	2A		'King II'	Chapman V & Miller TE	GBE
2R	2B		'King II'	Chapman V & Miller TE	GBE
2R	2D		'King II'	Chapman V & Miller TE	GBE
6R	6A		'King II'	Riley R	GBE
6R	6B		'King II'	Riley R	GBE
6R	6B		'King II'	Riley R	GBE
6R	6D		'King II'	Riley R	GBE
6R	6A		'King II'	Riley R	GBE
6R	6B		'King II'	Riley R	GBE
6R	6D		'King II'	Riley R	GBE

Secale montanum**Chinese Spring / Secale montanum Amphiploid**

3100001

Miller TE & Riley R

GBE

Chinese Spring / Secale montanum Additions

1Rm	3100001	Miller TE	GBE
2Rm	3100001	Miller TE	GBE
2Rm	3100001	Miller TE	GBE
4Rm	3100001	Miller TE	GBE
5Rm	3100001	Miller TE	GBE
5Rm	3100001	Miller TE	GBE
5Rm	3100001	Miller TE	GBE
6Rm	3100001	Miller TE	GBE
6Rm	3100001	Miller TE	GBE

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
2Rm			3100001	Miller TE	GBE
2Rm			3100001	Miller TE	GBE
5Rm			3100001	Miller TE	GBE
1Rm			3100001	Miller TE	GBE
4Rm			3100001	Miller TE	GBE
1Rm			3100001	Miller TE	GBE
1Rm			3100001	Miller TE	GBE
5Rm			3100001	Miller TE	GBE
6Rm			3100001	Miller TE	GBE
6Rm			3100001	Miller TE	GBE
2Rm			3100001	Miller TE	GBE
2Rm			3100001	Miller TE	GBE
4Rm			3100001	Miller TE	GBE
2Rm			3100001	Miller TE	GBE
Chinese Spring / Secale montanum Substitutions					
1Rm	1B		3100001	Miller TE & Reader SM	GBE
1Rm	1D		3100001	Miller TE & Reader SM	GBE
1Rm	1D		3100001	Miller TE & Reader SM	GBE
2Rm	2D		3100001	Miller TE & Reader SM	GBE
1Rm	1B		3100001	Miller TE & Reader SM	GBE
1Rm	1B		3100001	Miller TE & Reader SM	GBE
1Rm	1B		3100001	Miller TE & Reader SM	GBE
1Rm	1B		3100001	Miller TE & Reader SM	GBE
<i>Thinopyrum bessarabicum</i>					
Chinese Spring / Thinopyrum bessarabicum Amphiploid					
				Forster BP & Miller TE	GBE
Chinese Spring / Thinopyrum bessarabicum Additions					
1Eb				Forster BP & Miller TE	GBE
1Eb				Forster BP & Miller TE	GBE
2Eb				Kimber G	USA
4Eb				Kimber G	USA
5Eb				Kimber G	USA
zEb				Forster BP & Miller TE	GBE
zEb				Forster BP & Miller TE	GBE
5Eb				Kimber G	USA
5Eb				Kimber G	USA
1Eb				Forster BP & Miller TE	GBE
Chinese Spring / Thinopyrum bessarabicum Substitutions					
2Eb	2B			Forster BP & Miller TE	GBE

2Eb 2D
5Eb 5A
5Eb 5B
5Eb 5D
2Eb 2D
5Eb 5A
2Eb 2D

Chinese Spring / Thinopyrum bessarabicum Translocations

5Eb 5A

Forster BP & Miller TE GBE
Forster BP & Miller TE GBE
Forster BP & Miller TE GBE
Forster BP & Miller TE GBE
Forster BP & Miller TE GBE
Forster BP & Miller TE GBE
Forster BP & Miller TE GBE

Forster BP & Miller TE GBE

Vilmorin 27 / Thinopyrum intermedium Substitutions

zz z
7?z z
zz z

Cauderon Y FRA
Cauderon Y FRA
Cauderon Y FRA

Vilmorin 27 / Thinopyrum intermedium Amphiploid

Cauderon Y FRA

Vilmorin 27 / Thinopyrum intermedium Additions

1?z
1?z
1?z

Cauderon Y FRA
Cauderon Y FRA
Cauderon Y FRA

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety	Developer	
1?z				Cauderon Y	FRA
3?z				Cauderon Y	FRA
3z				Cauderon Y	FRA
4?z				Cauderon Y	FRA
5?z				Cauderon Y	FRA
5?z				Cauderon Y	FRA
6?z				Cauderon Y	FRA
7?z				Cauderon Y	FRA
zz				Cauderon Y	FRA
6?z				Cauderon Y	FRA
7?z				Cauderon Y	FRA
zz				Cauderon Y	FRA
zz				Cauderon Y	FRA

Triticum urartu

Chinese Spring / Triticum urartu Additons

4Au			1010003	Miller TE & Reader SM	GBE
4Au			1010003	Miller TE & Reader SM	GBE
4Au			1010003	Miller TE & Reader SM	GBE
4Au			1010003	Miller TE & Reader SM	GBE

Chinese Spring / Triticum urartu Substitution

4Au	4A		1010003	Miller TE & Reader SM	GBE
4Au	4A		1010003	Miller TE & Reader SM	GBE
4Au	4A		1010003	Miller TE & Reader SM	GBE
4Au	4B		1010003	Miller TE & Reader SM	GBE
4Au	4B		1010003	Miller TE & Reader SM	GBE
4Au	4B		1010003	Miller TE & Reader SM	GBE
4Au	4D		1010003	Miller TE & Reader SM	GBE
4Au	4D		1010003	Miller TE & Reader SM	GBE
4Au	4A		1010003	Miller TE & Reader SM	GBE
4Au	4B		1010003	Miller TE & Reader SM	GBE
4Au	4D		1010003	Miller TE & Reader SM	GBE

Miscellaneous Amphiploids

17-Nov-14

Ae. biuncialis 2060001	T. dicoccoides 1060007	56	Bell GDH	GBE
Ae. caudata 2090001	S. cereale 'Petkus Spring' 3030023	28	Reader SM	GBE
Ae. caudata 2090001	T. boeoticum thaoudar 1020043	28	Bell GDH	GBE
Ae. caudata 2090001	T. dicoccoides 1060007	42	Bell GDH	GBE
Ae. caudata 2090001	T. dicoccum 1070024	nc	Bell GDH	GBE
Ae. caudata 2090001	T. dicoccum 1070024	42	Bell GDH	GBE
Ae. caudata 2090001	T. dicoccum 1070024	41	Bell GDH	GBE
Ae. caudata 2090001	T. durum 'Indian Runner' 1180382	42	Bell GDH	GBE
Ae. caudata 2090001	T. turgidum 'Rampton Rivet' 1080057	42	Bell GDH	GBE
Ae. comosa 2110001	S. cereale 'Petkus Spring' 3030023	28	Reader SM	GBE
Ae. cylindrica	Ae. umbellulata	42	Sears ER	USA
Ae. cylindrica	T. boeoticum aegilopoides 1010003	42	Bell GDH	GBE
Ae. cylindrica	T. dicoccum 1070024	56	Bell GDH	GBE
Ae. cylindrica	T. durum	nc	Bell GDH	GBE
Ae. longissima 2150001	T. aestivum 'Holdfast' 1190868	56	Riley R & Chapman V	GBE
Ae. longissima 2150001	T. aestivum 'Holdfast' 1190868	56	Bell GDH	GBE
Ae. longissima 2150001	T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
Ae. longissima 2150001	T. carthlicum 1090001	nc	Bell GDH	GBE
Ae. longissima 2150001	T. carthlicum 1090001	42	Bell GDH	GBE
Ae. longissima 2150001	T. dicoccoides 1060007	nc	Bell GDH	GBE
Ae. longissima 2150001	T. dicoccum 1070024	42	Bell GDH	GBE
Ae. longissima 2150001	T. durum 'Kubanka'	42	Bell GDH	GBE
Ae. longissima 2150001	T. paleocolchicum 1130001	42	Bell GDH	GBE
Ae. longissima 2150001	T. turanicum 1110001	42	Bell GDH	GBE
Ae. longissima 2150001	T. turgidum 'Rampton Rivet' 1080057	42	Bell GDH	GBE
Ae. ovata 2020001	T. boeoticum aegilopoides 1030001	42	Bell GDH	GBE
Ae. ovata 2020001	T. timopheevi	nc	Bell GDH	GBE
Ae. speltooides 2140001	T. boeoticum aegilopoides 1030001	28	Bell GDH	GBE
Ae. speltooides 2140001	T. monococcum 1040001	28	Bell GDH	GBE
Ae. speltooides 2140002	T. carthlicum 1090001	41	Bell GDH	GBE

Ae. speltooides 2140002	T. carthlicum 1090001	43	Bell GDH	GBE
Ae. speltooides 2140002	T. carthlicum 1090001	nc	Bell GDH	GBE
Ae. speltooides 2140002	T. carthlicum 1090001	42	Bell GDH	GBE
Ae. speltooides 2140003	T. dicoccum 1070024	42	Bell GDH	GBE
Ae. triuncialis	T. durum 'Indian Runner' 1180382	56	Bell GDH	GBE
T. aestivum 'Atle'	S. cereale 'Pearl' 3030002	56	Bell GDH	GBE
T. aestivum 'Chinese Spring	S. ancestrale	56	Schlegel R	GER
T. aestivum 'Chinese Spring	S. segetale	55	Schlegel R	GER
T. aestivum 'Chinese Spring'	Ae. caudata 2090001	57	Chapman V	GBE

Alien chromosome Substituted chromosome Chromosome composition

Donor variety

Developer

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T. aestivum 'Chinese Spring'	Ae. caudata 2090001	56	Chapman V	GBE
T. aestivum 'Chinese Spring'	S. ancestrale	53	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. ancestrale	56	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. ancestrale	55+ It	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. cereale 'Petkus Spring'	56	Chapman V	GBE
T. aestivum 'Chinese Spring'	S. montanum	54	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. montanum 3100001	56	Miller TE & Riley R	GBE
T. aestivum 'Chinese Spring'	S. segetale	55	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. vavilovi	55?	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. vavilovi	56	Schlegel R	GER
T. aestivum 'Chinese Spring'	S. vavilovi 3160001	56	Miller TE	GBE
T. aestivum 'Druchamp'	S. cereale 'King II' 3030001	nc	Bell GDH	GBE
T. aestivum 'Holdfast	S. cereale 'Pearl' 3030002	nc	Bell GDH	GBE
T. aestivum 'Jubiligem'	S. cereale 'King II' 3030001	nc	Bell GDH	GBE
T. aestivum 'PP'	S. cereale 'King II' 3030001	56	Bell GDH	GBE
T. aestivum 'Swedish Iron'	S. cereale 'King II' 3030001	56	Bell GDH	GBE
T. aestivum 'Swedish Iron'	S. cereale 'King II' 3030001	55	Bell GDH	GBE
T. aestivum 'Wilhelmina'	S. cereale 'King II' 3030001	55	Bell GDH	GBE
T. aestivum 'Soissonais'	S. cereale 'King II' 3030001	nc	Bell GDH	GBE
T. aestivum 'Atle'	S. cereale 'Pearl' 3030002	56	Bell GDH	GBE
T. boeoticum aegilopoides	Ae. tauschii	28	Sears ER	USA
T. boeoticum thaouadar	T. boeoticum aegilopoides 1030001	28	Bell GDH	GBE
T. carthlicum	T. timopheevi	nc	Zhukovsky	SUN
T. carthlicum 1090001	T. timopheevi	nc	Bell GDH	GBE
T. dicoccoides	Ae. bicornis 2190001	42	Bell GDH	GBE
T. dicoccoides	Ae. caudata	42	Sears ER	USA
T. dicoccoides	Ae. sharonensis	42	Sears ER	USA
T. dicoccoides	Ae. tauschii	42	Sears ER	USA
T. dicoccoides	Ae. umbellulata	42	Sears ER	USA
T. dicoccoides	Ae. uniaristata	nc	Sears ER	USA
T. dicoccoides 1060002	Ae. bicornis 2190001	42	Bell GDH	GBE
T. dicoccoides 1060002	Ae. ovata 2020001	56	Bell GDH	GBE

T. dicoccoides 1060002	Ae. umbellulata 2010001	42	Bell GDH	GBE
T. dicoccoides 1060003	Ae. ovata 2020001	56	Bell GDH	GBE
T. dicoccoides 1060003	T. boeoticum aegilopoides 1030001	41	Bell GDH	GBE
T. dicoccoides 1060003	T. boeoticum aegilopoides 1030001	nc	Bell GDH	GBE
T. dicoccoides 1060007	T. boeoticum thaoudar 1020043	nc	Bell GDH	GBE
T. dicoccoides 1060007	T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
T. dicoccoides 1060007	T. monococcum 1040001	42	Bell GDH	GBE
T. dicoccoides 1060007	T. timopheevi	nc	Bell GDH	GBE
T. dicoccum	D. villosum	42		

Alien chromosome	Substituted chromosome	Chromosome composition	Donor variety		Developer	
T. dicoccum 1070024			Ae. caudata 2090001	41	Bell GDH & Sachs L	GBE
T. dicoccum 1070024			Ae. caudata 2090001	nc	Bell GDH & Sachs L	GBE
T. dicoccum 1070024			T. boeoticum aegilopoides 1030001	42	Bell GDH	GBE
T. dicoccum 1070024			T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
T. dicoccum 1070024			T. monococcum 1040001	28	Bell GDH	GBE
T. dicoccum 1070024			T. timopheevi	57	Bell GDH	GBE
T. dicoccum 1070026			Ae. tauschii 2220053	42	McFadden ES & Sears	USA
T. durum			T. boeoticum aegilopoides 1030001	nc	Bell GDH	GBE
T. durum			T. boeoticum aegilopoides 1030001	42	Bell GDH	GBE
T. durum			T. timopheevi	55	Zebrak	SUN
T. durum			T. timopheevi	nc	Zebrak	SUN
T. durum			Th. elongatum	42	Jenkins BC	CAN
T. durum			Th. elongatum	41	Jenkins BC	CAN
T. durum 'Aziziah' 1180350			S. montanum 3100001	42	Miller TE	GBE
T. durum 'Aziziah' 1180350			S. montanum 3100001	42	Riley R & Miller TE	GBE
T. durum 'Calvin'			Th. disticum	56	Pienaar R	ZAF
T. durum 'Indian Runner' 1180382			Ae. ovata 2020001	nc	Bell GDH	GBE
T. durum 'Indian Runner' 1180382			T. boeoticum aegilopoides 1010003	42	Bell GDH	GBE
T. durum 'Indian Runner' 1180385			T. boeoticum aegilopoides 1010003	42	Bell GDH	GBE
T. durum 'Kubanka' 1180112			T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
T. durum 'Mexicali 75'			Ae. speltooides 2140001	42	Miller TE	GBE
T. durum 'Mexicali 75'			Ae. speltooides 2140001	41+ t	Miller TE	GBE
T. durum 'Mexicali 75'			Ae. speltooides 2140001	41	Miller TE	GBE
T. durum 'Mexicali 75'			Ae. speltooides 2140001	nc	Miller TE	GBE
T. durum 'Nordum'			Th. disticum	56	Pienaar R	ZAF
T. monococcum			Ae. uniariastata	28	Sharman	GBE
T. monococcum 1040001			T. boeoticum thaoudar 1020043	28	Bell GDH	GBE
T. monococcum 1040001			T. boeoticum thaoudar 1020043	nc	Bell GDH	GBE
T. paleocolchicum 1130001			T. boeoticum aegilopoides 1030001	42	Bell GDH	GBE
T. paleocolchicum 1130001			T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
T. paleocolchicum 1130001			T. monococcum 1040001	42	Bell GDH	GBE
T. timopheevi			Ae. bicornis	42	Sears ER	USA

T. timopheevi	Ae. ovata 2020001	nc	Bell GDH	GBE
T. timopheevi	Ae. ovata 2020001	55	Bell GDH	GBE
T. timopheevi	Ae. tauschii	42	Sears ER	USA
T. timopheevi	H. bogdanii	42	Kimber G & Sallee PJ	USA
T. timopheevi	T. boeoticum thaouadar 1020043	42	Bell GDH	GBE
T. timopheevi	T. durum	nc	Bell GDH	GBE
T. timopheevi	T. durum 'Indian Runner' 1180382	55	Bell GDH	GBE
T. timopheevi	T. durum 'Indian Runner' 1180382	nc	Bell GDH	GBE
T. timopheevi	T. monococcum	nc	Kostov	SUN
T. timopheevi	T. polonicum 1100001	56	Bell GDH	GBE

Alien Substituted Chromosome
chromosome chromosome composition

Donor variety

Developer

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T. timopheevi		T. polonicum 1100001	56	Bell GDH	GBE
T. timopheevi		T. turanicum 1110001	nc	Bell GDH	GBE
T. timopheevi		T. turgidum 'Rampton Rivet' 1080057	nc	Bell GDH	GBE
T. timopheevi		T. turgidum 'Rampton Rivet' 1080057	57	Bell GDH	GBE
T. turgidum 'Rampton Rivet' 1080057		Ae. sharonensis 2170001	42	Bell GDH	GBE
T. turgidum 'Rampton Rivet' 1080057		Ae. ventricosa 2270001	56	Kimber G	GBE
T. turgidum 'Rampton Rivet' 1080057		T. boeoticum aegilopoides 1030001	42	Bell GDH	GBE
T. turgidum 'Rampton Rivet' 1080057		T. boeoticum thaoudar 1020043	42	Bell GDH	GBE
T. turgidum 'Rampton Rivet' 1080057		T. monococcum 1040001	42	Bell GDH	GBE
T. turgidum 'Rampton Rivet' 1080057		T. timopheevi	56	Bell GDH	GBE
T. urartu 1010003		Ae. bicornis 2190001	28	Bell GDH	GBE
T. urartu 1010003		Ae. bicornis 2190001	nc	Bell GDH	GBE