**S1 Table. Description of the trials used in the study.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Site# | Site name, province/state/region, country | Trial name | Number of entries | Replication | Years with missing data |
| 1 | Beaverlodge, Alberta, Canada | PRCWRTa Registration Trials | 25- 30 | 3 | 1983; 1986; 1988; 1990; 2013 |
| 2 | Lethbridge, Alberta, Canada | 1985; 1988; 2005; 2013 |
| 3 | Saskatoon, Saskatchewan, Canada | 1988; 2002 |
| 4 | Swift Current, Saskatchewan, Canada | - |
| 5 | Brandon, Manitoba, Canada | 1992; 2000; 2011 |
| 6 | Glenlea, Manitoba, Canada | 1994; 2004; 2007; 2013; 2014; 2015 |
| 7 | Crookston, Minnesota, USA | HRSWURNb Performance Nursery | 32-40 | 3 | 2011; 2012 |
| 8 | St. Paul, Minnesota, USA | 2011; 2012 |
| 9 | Carrington, North Dakota, USA | 1991; 2011; 2012 |
| 10 | Langdon, North Dakota, USA | 2011; 2012 |
| 11 | Brookings, South Dakota, USA | 1982; 2011; 2012 |
| 12 | Selby, South Dakota, USA | 1982; 1986; 1997; 2011; 2012 |
| 13 | Samara, Russia | Breeding programs advanced yield trials and Registration Trial in Astana | 15-30 | 4 | - |
| 14 | Saratov, Russia | - |
| 15 | Barnaul, Russia | - |
| 16 | Omsk, Russia | - |
| 17 | Kostanay, Kazakhstan | 2006 |
| 18 | Astana, Kazakhstan | - |
| 19 | Novosibirsk, Russia | 1997-2002; 2005 |

a Prairie Recommending Committee for Wheat, Rye and Triticale

b Hard Red Spring Wheat Uniform Regional Performance Nursery