Small Grain Quick Facts: Hard Red Spring Wheat

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General Variety Descriptions: Descriptions are based on performance in multi-year/location yield trials that were grown using recommended conventional wheat farming practices. Actual variety performance may vary, depending on local growing conditions and farming methods. All varieties listed are PVP protected.

DAGMAR *(MAES release, 2019)*: Moderately sawfly resistant, high yielding, high protein, good test weight, early maturing hard red spring wheat variety. Dagmar has performed well in diverse dryland growing environments and has excellent end-use quality. Susceptible to plant available aluminum in low pH soil.

DUCLAIR *(MAES release, 2011)*: Early maturing hard red spring wheat variety that has slightly better sawfly resistance than Dagmar and has good yield potential. Grain protein content is above average and end-use quality is excellent. Tolerant of plant available aluminum in low pH soils. Difficult to thresh.

MT CARLSON *(MAES release, 2023)*: Overall, one of the top yielding hard red spring wheat varieties in dryland growing environments, especially in drought conditions. Early maturing variety with grain protein content slightly higher than Vida, good test weight and better end-use quality than Vida. Sawfly resistance is similar, to more susceptible than Vida, depending on growing conditions, and is not as resistant as Dagmar. Tolerant of plant available aluminum in low pH soils. Susceptible to scab (fusarium head blight).

MT DUTTON *(MAES release, 2023)*: One of the top yielding hard red spring wheat varieties in Montana's dryland growing environments. MT Dutton is a medium maturity variety with grain protein content that is higher than MT Carlson but slightly lower than Dagmar and Lanning. Test weight ranges from being similar – slightly lower than MT Carlson and Vida. Moderate resistance to scab (fusarium head blight). Moderately susceptible to sawfly. End-use quality is similar to Vida.

MT UBET *(MAES release, 2024):* High yielding variety adapted to Montana dryland growing environments. It has done especially well in the Sidney, MT yield trials. Has good grain protein content and good test weight. MT UBET good gluten strength compared to Reeder and Vida and has an upright plant architecture. MT UBET is susceptible to wheat stem sawfly.

VIDA *(MAES release, 2005)*: High yielding, good test weight, medium-late maturing hard red spring wheat variety for Montana's dryland growing environments. Vida has good drought tolerance and moderate sawfly resistance; however, Vida's sawfly resistance is not as good as Dagmar or Duclair. Grain protein content and end-use quality are average. Vida does not have tolerance to plant available aluminum in low pH soils.

Table 1. Agronomic performance for selected varieties in the advanced spring wheat nursery, 2021-2024.

VARIETY	BOZEMAN, CONRAD, FORT BENTON, HAVRE, HINGHAM, HUNTLEY, MOCCASIN, SIDNEY-DRY, WILLISTON, BOZEMAN-IRRI, KALISPELL, SIDNEY-IRRI						BOZEMAN
	YIELD (BU/AC)	TEST WEIGHT (LB/BU)	PROTEIN (%)	PLANT HEIGHT (IN)	HEADING (JULIAN DAYS)	HEADING DATE	STEM SOLIDNESS (5-25)
*N=LOC*YEARS*	**44**	**45**	**46**	**44**	**26**	**26**	**4**
MT CARLSON	**63.9**	60.1	14.1	28.8	177	26-Jun	17.9
MT DUTTON	**63.4**	59.5	14.3	29.3	178	27-Jun	11.2
DAGMAR	**62.9**	60.7	14.7	29.9	**175**	**24-Jun**	18.4
MT UBET	**62.4**	60.1	14.3	28.7	177	26-Jun	12.7
LCS ASCENT	**62.3**	**61.3**	13.8	29.0	**175**	**24-Jun**	6.8
VIDA	61.1	59.8	14.0	29.7	178	27-Jun	13.0
ROCKER	61.0	60.8	14.3	29.3	179	28-Jun	10.6
NS PRESSER CLP	60.1	59.0	14.0	30.9	180	29-Jun	7.5
LANNING	59.1	59.7	14.9	28.4	176	25-Jun	8.1
SY LONGMIRE	58.5	60.6	14.6	28.1	177	26-Jun	**20.9**
SY ROCKFORD	58.4	59.1	14.2	29.1	179	28-Jun	7.9
DUCLAIR	58.2	59.1	14.5	29.4	176	25-Jun	19.9
REEDER	57.4	60.2	14.6	30.4	178	27-Jun	7.7
WB 9879 CLP	57.0	59.7	14.7	28.5	178	27-Jun	**22.4**
AP GUNSMOKE	56.9	59.9	**15.2**	28.0	177	26-Jun	7.9
WB GUNNISON	56.5	60.4	13.9	27.7	178	27-Jun	11.4
AP SMITH	55.6	60.2	14.9	26.2	179	28-Jun	10.1
McNEAL	55.4	59.2	14.6	30.4	179	28-Jun	8.0
SY INGMAR	55.3	60.6	14.9	27.8	178	27-Jun	9.0
AAC CCONCORD	52.8	59.4	14.8	**33.4**	179	28-Jun	**20.8**
LSD (0.05)	**2.7**	**0.5**	**0.3**	**0.7**	**0.6**	-	**1.9**

Ishita Isha's Graduate Student Project

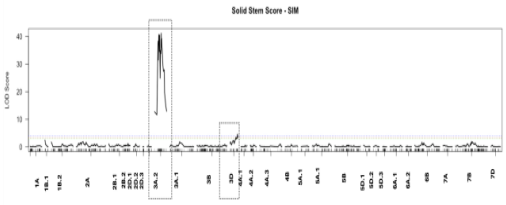
Durable Resistance to WSS in Spring wheat and Durum

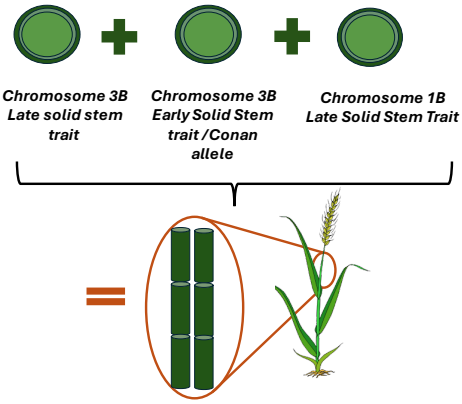
Finding novel genetic regions that control for the solid stem trait

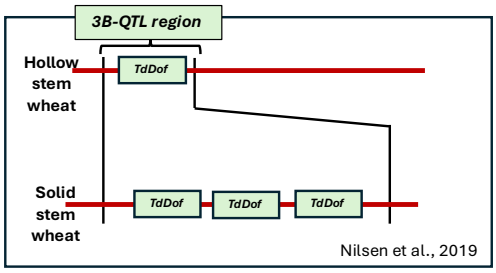
Stacking genetic regions that control for Solid Stem trait can give holistic resistance to WSS

Predicting copies of *TdDof* gene using a wheat pangenome helps predict expression of the solid stem trait in wheat.

"We identified a major QTL on chromosome 3A that accounts for 62% of the phenotypic variation for the solid stem trait in CIMMYT-9263."







MT Ubet (2024 MAES Release)

MT 21074 (Potential Release)

2024 MT Spring Wheat Variety Performance Report

MT Wheat Production Guide