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Coordinated Agricultural Projects (CAP)



Varieties and germplasm released by the WheatCAP

PVP source <https://www.ars-grin.gov/cgi-bin/npgs/pvp/pvplist.pl>

2019 Commercial Wheat Varieties

1. **‘Dagmar’** (PVP application pending from Montana State University) is a solid-stemmed hard red spring wheat intended for acreage infested with the wheat stem sawfly. Dagmar has shown excellent dryland yield potential and high gluten strength.
2. **‘Amarillo’** (PVP application pending from UC Davis) is a hard white spring with high levels of yellow pigment in the flour. The expected market for this variety is the artisan baker market and consumers interested in the nutritional value of food.
3. **‘UI Bronze Jade’** (PI 691501) hard white winter wheat (*Triticum aestivum* L.) was developed and released by the Idaho Agricultural Experimental Station in 2019. Compared to ‘UI Silver’, UI Bronze Jade had significantly higher grain yield, shorter plant height, better resistance to stripe rust, and comparable bread-baking quality. UI Bronze Jade is adapted to irrigated and dryland production environments in southeastern Idaho and in rainfed environments in northern Idaho. The high grain yield was contributed by more productive spikes and spikelet numbers.
4. **‘Winner’** (SD14115-5) is a hard red winter wheat cultivar developed by the South Dakota Agricultural Experimental Station with unusually broad adaptation to the eastern half of the Northern Great Plains. ‘Winner’ has medium height and medium maturity with higher yield potential, good baking quality, and moderate resistance to stem rust. (recommended for release in fall 2019)
5. **‘Draper’** (SD14113-3) is a hard red winter wheat cultivar developed by the South Dakota Agricultural Experimental Station with a limited target region, specifically western South Dakota. ‘Draper’ has improved yield potential with average test weight, grain protein, and good milling and baking quality. It is resistant to soilborne mosaic virus. (recommended for release in fall 2019)
6. **‘SD13062-2’** hard red winter wheat germplasm with moderate resistance to FHB (it has a comparable level of resistance to cv. Everest). In addition, SD13062-2 has good yield potential with above-average grain protein content and test weight.
7. **‘TAM 115’** released in 2019 from TAMU. PVP pending.
8. **‘TAM 205’** released in 2019 from TAMU. PVP pending.

9. **‘Guardian’** (CO13D0787), a hard red winter wheat, released in 2019 by Colorado State University. Has combined resistance for wheat curl mite (CMC-T112-6D) and wheat streak mosaic virus (*Wsm2*).
10. **‘Fortify SF’** (CO15SFD107), a hard red winter wheat, released in 2019 by Colorado State University. Has the semi-solid-stemmed trait for partial resistance to wheat stem sawfly.
11. **‘KS Dallas’** is a hard red winter wheat variety developed by Kansas State University. It has high yield potential and excellent wheat streak mosaic virus resistance. It carries Bx7OE allele, which confers strong mixing tolerance. PVP application pending.
12. **‘KS Western Star’** is a hard red winter wheat variety developed by Kansas State University. It has good yield potential and drought tolerance. It carries *cmc4* allele, which confers wheat curl mite resistance. PVP application pending.
13. **‘KS Silverado’** is a hard white winter wheat variety developed by Kansas State University. It has good yield potential and broad adaptation. It has pre-harvest sprouting tolerance and good disease resistance package. PVP application pending.
14. **‘AM Cartwright’** is a hard red winter wheat variety developed by Kansas State University. It has competitive yields, excellent disease resistance package, and good baking quality. PVP application pending.
15. **‘AR01040-4-1’** (PVP application pending) is a common wheat variety released by the Board of Trustees of the University of Arkansas from the University of Arkansas.
16. **‘Net CI+’** is a hard red spring wheat variety released by WSU with two-gene resistance to Imazamox. It is broadly adapted with Hessian fly resistance, adult plant resistance to stripe rust, very good yield, test weight, and grain protein concentration. Approved for release in 2019. PVP will be submitted winter 2020.
17. **‘Stingray CL+’** is a soft white winter wheat cultivar released by WSU with two-gene resistance to Imazamox. It also carries the *Pch1* gene and *Yr17* gene for disease resistance. Stingray CL+ has the *Rht-B1b* dwarfing allele and carries the *Ax1+Ax2** alleles as *GluA1* and the *Dx2+Dy12* alleles at *GluD1*. It is broadly adapted across the Pacific Northwest and has very good end-use quality. Submitted to PVP and pending.
18. **‘Scorpio’** is a hard red winter wheat released by WSU for its excellent tolerance to low pH soils. This line has very good strip rust resistance, and carries the resistance gene *Yr17* among other unknown sources. Scorpio carries the *Rht-B1b* allele for dwarfing and the *Dx5+Dy10* alleles at *GluD1*. Scorpio does exceptionally well in no-till production systems. PVP will be submitted fall 2019.
19. **‘Devote’** is a soft white winter wheat released by WSU for production in <12” rainfall zones of Washington. This line has excellent disease resistance, as it carries the *Pch1* gene, *Yr17* gene, *Lr68* gene, and a stripe rust resistance gene from the cultivar Eltan. It is also tolerant to snow mold and *Fusarium* crown rot and has very good cold tolerance and end-use quality attributes. PVP will be submitted fall 2019.
20. **‘MN-Washburn’** (PVP to be submitted) is a hard red spring variety released by the UMN wheat breeding program in 2019 that has competitive grain yield and good lodging

resistance. MN-Washburn is resistant to prevalent races of leaf and stripe rust and is moderately resistant to Fusarium head blight and bacterial leaf streak.

21. ‘**MI14R1140**’ is a soft red winter wheat released by the Michigan Crop Improvement Association.
22. ‘**MI14W1039**’ is a soft white winter wheat released by the Michigan Crop Improvement Association.

Pending PVP in 2018 report that received PVP in 2019

1. ‘**UC-Desert Gold**’ (PVP 201900010 from UC Davis) is a Desert Durum® variety with reduced cadmium (*Cdu1* gene), increase yellow pigment (two QTL for semolina yellow pigment) and color stability (*lpxB1.1* mutation) and increased gluten strengths. It showed very high grain yield in the San Joaquin and Imperial Valleys and excellent pasta quality.
2. ‘**UC-Central Red**’ (PVP 201900011 from UC Davis) is a hard red spring wheat variety with one of the highest yields in the Sacramento and San Joaquin valleys and excellent breadmaking quality. It was selected with molecular markers for s resistance gene *Yr15* effective against stripe rust, strong gluten allele *Glu-D1d*, and the 2NS/2AS translocation from *Aegilops ventricosa*.
3. ‘**Skydance**’ (OK13625, PVP 201900173) is a hard red winter wheat, developed by the Oklahoma Agricultural Experimental Station. It has high nitrogen use efficiency and broad and effective foliar disease resistance.
4. ‘**Showdown**’ (OK12716, PVP 201900170) is hard red winter wheat developed by the Oklahoma Agricultural Experimental Station with improved yield potential, stripe rust resistance, Hessian fly resistance, and superior test weight.
5. ‘**Green Hammer**’ (OK13209, PVP 201900171) is a hard red winter wheat developed by the Oklahoma Agricultural Experimental Station that has elevated grain protein content, superior test weight, and exceptional protection against leaf rust and stripe rust.
6. ‘**Baker’s Ann**’ (OK13621, PVP 201900172) hard red winter wheat, developed by the Oklahoma Agricultural Experimental Station for contracted production and direct shipment to end-users with a need for elevated dough strength in the HRW class.
7. ‘**KS Venada**’ (PVP 201900192) is a hard white winter wheat cultivar developed by Kansas State University. It has competitive yield in central Kansas and good disease package with improved straw strength and pre-harvest sprouting tolerance.
8. ‘**Breck**’ (CO12D2011, PVP 201800521) is a hard white winter wheat released by the Colorado Wheat Research Foundation carrying *Glu-B1a1* (HMWG Bx7oe+8), *Glu-D1d* (HMWG 5+10), PHS3AS, *Lr24/Sr24*, and *Lr37/Yr17* genes.
9. ‘**Incline AX**’ (CO14A065, PVP 201800522) is a hard red winter wheat released by the Colorado Wheat Research Foundation compatible with the CoAXium wheat production system carrying *Lr46* and *Glu-D1a* (HMWG 2+12).

2019 Germplasm

Three hard white winter wheat germplasms with adult plant resistance to stem rust, KS14U6380R5, KS16U6380R10 and KS16U6380R11 were developed by the USDA-ARS group in Kansas.

2019 Mapping populations

1. University of Idaho deposited two doubled haploid mapping populations (UI Platinum x SY Capstone and UI Platinum x LCS Star) that are being used in cloning of yield component projects.
2. Texas A&M University developed 3 mapping population: a) A set of 222 F₆ RILs from the cross of TAM 204/Iba. The population was genotyped and yield components were collected from five environments in Texas. b) A set of 180 F₆ RILs from TAM 112/Duster that was genotyped and tested in six environments in Texas and Oklahoma mainly for drought tolerance. c) A set of 178 F₆ RILS from TAM 111/TX05A001822 that were tested in five environments. QTL analyses are under way. Bread-making quality was analyzed in three environments.