New for the 2021 Bulletin:

**CP7909** – hard red winter wheat developed by Winfield United (Croplan) and released in 2018. CP7909 is an early maturing, medium short statured wheat, with white chaff. CP7909 appears to have below average winter hardiness under limited testing in 2020. CP7909 has below average yield and average test weight and protein. CP7909 appears to be resistant to stripe rust conditions. Mill and bake characteristics of CP7909 have not been determined under Montana growing conditions.

**Langin** – (previously tested in 2017 and 208). Langin is a hard red winter wheat developed by Colorado and released in 2016. Langin is an early maturing, short statured wheat, with white chaff. Winter-hardiness is average. Langin has average yield and test weight and below average protein. Langin is moderately susceptible to stripe rust. Langin is a high PPO variety with below average mill and average bake characteristics. PVP, Title V is issued (Certificate #201700298). Langin will not be in the Montana Intrastate Winter Wheat Test for 2021.

**LCS Helix AX** – hard red CoAxium herbicide resistant winter wheat developed by Limagrain and released in 2020. LCS Helix AX is an early maturing, medium statured wheat, with white chaff. LCS Helix AX appears to have average winter hardiness under limited testing in 2020. LCS Helix AX has average yield, above average test weight and below average protein. LCS Helix AX appears to be moderately resistant to stripe rust under Pacific Northwest conditions. Mill and bake characteristics of LCS Helix AX have not been determined under Montana growing conditions. PVP, Title V is pending (Certificate #202000235). Additionally, the CoAXium genes are patented.

**LCS Photon AX** – hard red CoAxium herbicide resistant winter wheat developed by Limagrain and released in 2019. LCS Photon AX is a medium early maturing, medium statured wheat, with white chaff. LCS Photon AX appears to have below average winter hardiness under limited testing in 2020. LCS Photon AX has below average yield, high test weight and above average protein. LCS Photon AX appears to be resistant to stripe rust under Pacific Northwest conditions. Mill and bake characteristics of LCS Photon AX have not been determined under Montana growing conditions. PVP, Title V is issued (Certificate #201900413).

**Mpress** – soft white winter wheat developed by Syngenta (licensed to McGregor Co.) and released in 2017. Mpress is an early maturing, medium short statured wheat, with white chaff. Mpress appears to have below average winter hardiness under limited testing in 2020. Mpress has high yield and below average test weight and protein. Mpress appears to be resistant to stripe rust under Pacific Northwest conditions. Mill and bake characteristics of Mpress have not been determined under Montana growing conditions. PVP, Title V is issued (Certificate #201700113). Mpress will not be in the Montana Intrastate Winter Wheat Test for 2021.

**WB4792** - hard red winter wheat developed by WestBred and released in 2019. WB4792 is a medium maturing, medium statured wheat, with white chaff. WB4792 appears to have average winter hardiness under limited testing in 2020. WB4792 has above average yield, high test weight and below average protein. WB4792 appears to be moderately resistant to stripe rust under Pacific Northwest conditions. Mill and bake characteristics of WB4792 have not been determined under Montana growing conditions. PVP, Title V is pending (Certificate #201900398).

Varieties previously in bulletin:

**AAC Wildfire** – hard red winter wheat developed by Agriculture and AgriFoods Canada in Alberta, released in 2015, and marketed by SECAN. AAC Wildfire is a late maturing, hollow-stemmed, tall wheat with red chaff. AAC Wildfire has average yield, test weight, and protein, with above average winter survival. AAC Wildfire is moderately resistant to stripe rust. AAC Wildfire has high PPO, average milling and above average baking characteristics. PVP, Title V is pending (Certificate #202000035).

**Bobcat** – hard red winter wheat developed by the Montana Agricultural Experiment Station and available to certified seed growers in fall 2019. Bobcat is a medium maturing, solid-stemmed, short wheat with white chaff. Bobcat has above average yield and test weight, average protein, with above average winter survival. Bobcat has the highest yield and lowest percent sawfly cutting, of all varieties, in trials where sawfly pressure was above 10% cutting. Bobcat has excellent resistance
to stripe rust and is moderately susceptible to stem rust. Bobcat has medium-low PPO and above average milling and baking characteristics. PVP, Title V is pending (Certificate #202000117).

**Brawl CL Plus** – hard red winter wheat developed by Colorado and released in 2011. Brawl CL Plus is an early maturing, medium short statured wheat, with white chaff. Brawl CL Plus has average yield and above average test weight and protein. Brawl CL Plus is susceptible to stripe rust. Brawl CL Plus is a high PPO variety with average milling and baking characteristics. PVP, Title V has been issued (Certificate #201200434). Additionally, the CLEARFIELD genes are patented.

**Byrd CL Plus** – hard red winter wheat developed by Colorado and released in 2018. Byrd CL Plus is an early maturing, hollow-stemmed, medium-tall wheat with white chaff. Byrd CL Plus has above average yield, average test weight, and below average protein, with average winter survival. Resistance or susceptibility to stripe rust, under Montana conditions, has not been determined for Byrd CL Plus. Byrd CL Plus has high PPO and average milling and baking characteristics. PVP, Title V is pending (Certificate #201900417). Additionally, the CLEARFIELD genes are patented.

**Flathead** – hard red winter wheat developed by the Montana Agricultural Experiment Station and available to certified seed growers in fall 2019. Flathead is an early maturing (especially for a Montana line), hollow-stemmed, medium height wheat with white chaff. Flathead has average yield, above average test weight, and average protein, with average winter survival. Flathead has excellent resistance to stripe rust and is moderately resistant to both stem rust and dwarf bunt. Flathead has medium PPO and above average milling and baking characteristics. PVP, Title V is pending (Certificate #202000202).

**FourOsix** - hard red winter wheat developed by the Montana Agricultural Experiment Station and available to seed growers in fall 2018. FourOsix is a medium maturing, short to medium statured wheat, with average winter-hardiness. FourOsix is a high yielding variety with above average test weight and average protein. FourOsix (50% Yellowstone, in pedigree) is similar in grain yield of Yellowstone - but with significantly earlier heading, shorter plant height, and significantly higher test weight and protein. FourOsix is resistant to stripe rust and this resistance is either similar or significantly higher than that of Yellowstone. FourOsix is moderately susceptible to stem rust. FourOsix has excellent milling and baking qualities, comparable to Decade and parental cultivar, Yellowstone. PVP, Title V has been issued (Certificate #201900053).

**Incline AX** – hard red winter wheat developed by Colorado and released in 2017. Incline AX is the first wheat to be released as part of the CoAXium Wheat Production System for use in control of grassy weeds. Incline AX is a medium maturing, hollow-stemmed, medium height wheat with white chaff. Incline AX has below average yield, test weight, and protein, with below average winter survival. Resistance or susceptibility to stripe rust, under Montana conditions, has not been determined for Incline AX. Incline AX has medium PPO and below average milling and baking characteristics. PVP, Title V has been issued (Certificate #201800522). Additionally, the CoAXium genes are patented. Incline AX will not be in the Montana Intrastate Winter Wheat Test for 2021.

**Judee** – hard red winter wheat developed by the Montana Agricultural Experiment Station in 2011. Judee is a white-glumed, solid-stem, semi-dwarf (Rht1) wheat with medium maturity. Judee has average yield, test weight, and protein, and below average winter hardiness. Judee is susceptible to prevalent races of stem and leaf rust but resistant to stripe rust. Stem-solidness of Judee is most similar to Genou. Judee is a high PPO variety with average mill and above average bake properties. PVP, Title V has been issued (Certificate #201200161).

**Keldin** – hard red winter wheat developed by Peter Franck (Germany) and released by WestBred in 2011. Keldin is a medium maturing, medium short statured wheat, with white chaff. Keldin has above average yield and test weight and average protein. Keldin is moderately susceptible to stripe rust. Keldin is a high PPO variety with average mill and below average bake characteristics. PVP, Title V has been issued (Certificate #201300462).

**LCS Jet** – hard red winter wheat developed by Limagrain LLC and released in 2015. LCS Jet is a medium maturing, short statured wheat, with white chaff. Winter-hardiness is below average. LCS Jet has above average yield (#1 in 2017 across 7 locations tested) and below average test weight and average protein. LCS Jet is resistant to stripe rust. LCS Jet is a high PPO variety with above average mill and below average bake characteristics. PVP, Title V has been issued (Certificate #201600094).
Loma – hard red winter wheat developed by the Montana Agricultural Experiment Station and released in 2016. Loma is a semi-solid stemmed (similar to Genou), medium-late maturing, medium short statured wheat, with white chaff. Loma has above average yield and average test weight and protein. Loma is resistant to both stripe and stem rust. Loma is a medium low PPO line with above average mill and bake. PVP, Title V is pending (Certificate #201700021).

Long Branch – hard red winter wheat developed by Limagrain LLC, licensed by Dyna Gro Wheat, and released in 2015. Long Branch is an early maturing, short statured wheat, with white chaff. Winter-hardiness is average. Long Branch has above average yield and test weight and below average protein. Long Branch is resistant to stripe rust. Mill and bake characteristics, under Montana conditions, have not been determined. PVP, Title V is issued (Certificate #201700105). Long Branch will not be in the Montana Intrastate Winter Wheat Test for 2021.

Northern – hard red winter wheat developed the Montana Agricultural Experiment Station and available to growers in fall 2015. Northern is a medium-late maturing, medium-short statured wheat, with white chaff. Northern has average yield (similar to Yellowstone and Colter), average test weight, and average protein. Northern is resistant to both stem and stripe rust. Northern is a low PPO variety with average milling and average baking properties. PVP, Title V has been issued (Certificate #201600092).

StandClear CLP – hard red winter wheat developed by the Montana Agricultural Experiment Station for exclusive license to Nutrien Ag Solutions (Loveland Products Inc., Loveland, CO) with a full partnership agreement with BASF Chemical Company. StandClear CLP will be available to certified seed growers in fall 2020. StandClear CLP is a medium maturing, semisolid-stemmed, medium height wheat with white chaff. StandClear CLP has average yield, above average test weight, and average protein, with good winter survival. StandClear CLP has high PPO and average milling and baking characteristics. PVP, Title V has been issued (Certificate #202000183). Additionally, the CLEARFIELD genes are patented.

SY 517 CL2 – a 2-gene CLEARFIELD hard red winter wheat developed by Syngenta and released in 2017. SY 517 CL2 is an early maturing, short statured wheat, with white chaff. Winter-hardiness is below average. SY 517 CL2 has below average yield, above average test weight, and average protein. SY 517 CL2 is moderately susceptible to stripe rust. SY 517 CL2 is a medium PPO variety with average mill and below average bake characteristics. PVP, Title V is issued (Certificate #201700216). Additionally, the CLEARFIELD genes are patented.

SY Clearstone 2CL – a 2-gene CLEARFIELD hard red winter wheat developed by Montana Agricultural Experiment Station in 2012 and licensed exclusively to Syngenta Seeds. SY Clearstone wheat 2CL is very similar to Yellowstone. It is a medium maturing, medium tall, white chaffed wheat with average winter hardness. It is a high yielding wheat with average test weight and protein. SY Clearstone 2CL is resistant to stripe rust and has moderate resistance to stem rust, the latter an improvement over Yellowstone. SY Clearstone 2CL is resistant to common bunt. SY Clearstone 2CL is a medium PPO variety with average mill and above average bake properties. PVP, Title V has been issued (Certificate #201300357). Additionally, the CLEARFIELD genes are patented.

SY Legend CL2 – hard red winter wheat developed by Syngenta Participations AG and released in 2018. SY Legend CL2 is a medium-early maturing, hollow-stemmed, short wheat with white chaff. SY Legend CL2 has below average yield, above average test weight, and average protein with below average winter survival. Resistance or susceptibility to stripe rust, under Montana conditions, has not been determined for SY Legend CL2. SY Legend CL2 has high PPO and average milling and baking characteristics. PVP, Title V is issued (Certificate #201800226). Additionally, the CLEARFIELD genes are patented.

SY Monument – hard red winter wheat developed by Syngenta and released in 2015. SY Monument is a medium maturing, medium short statured wheat, with white chaff. SY Monument has average yield, below average test weight and average protein. SY Monument is resistant to stripe rust. SY Monument is a medium low PPO variety with average mill and below average bake characteristics. PVP, Title V has been issued (Certificate #201400332).

SY Wolverine – hard red winter wheat developed by Syngenta and released in 2019. SY Wolverine is a medium early maturing, hollow-stemmed, short wheat with white chaff. SY Wolverine has below average yield, above average test weight, and above average protein, with below average winter survival. SY Wolverine appears to be moderately susceptible to stripe rust under Pacific Northwest
conditions. SY Wolverine has high PPO with average mill and below average baking characteristics. PVP, Title V is issued (Certificate #201900271).

**Warhorse** - is an awned, white glumed, solid-stemmed hard red winter wheat released in 2013 by the Montana Agricultural Experiment Station. Warhorse has medium maturity and has medium short, semi-dwarf height. Warhorse’s winter hardiness, rated at 4 on 0-5 scale, is an improvement over other solid stem varieties. Stem solidness is similar to that of Bearpaw and Rampart, while sawfly cutting of stems is very low (similar to Rampart). Warhorse yield is similar to Judee, while test weight and protein are above average. Warhorse is resistant to both stem and stripe rust. Warhorse has acceptable mill and bake qualities. PVP, Title V has been issued (Certificate #201400131).

**WB4269** – hard red winter wheat developed by WestBred and released in 2017. WB4269 is a medium early maturing, hollow-stemmed, short wheat with white chaff. WB4269 has below average yield, above average test weight, and above average protein, with below average winter survival. WB4269 appears to be resistant to stripe rust under Pacific Northwest conditions. WB4269 has medium-low PPO with below average mill and baking characteristics. PVP, Title V is pending (Certificate #201800093). **WB4269 will not be in the Montana Intrastate Winter Wheat Test for 2021.**

**WB4311** – hard red winter wheat developed by WestBred and released in 2017. WB4311 is a medium maturing, hollow-stemmed, short wheat with white chaff. WB4311 has average yield, above average test weight, and above average protein, with average winter survival. WB4311 appears to be moderately resistant to stripe rust under Pacific Northwest conditions. WB4311 has high PPO with average mill and baking characteristics. PVP, Title V is issued (Certificate #201800086). **WB4311 will not be in the Montana Intrastate Winter Wheat Test for 2021.**

**WB4418** - hard red winter wheat developed by WestBred and released in 2018. WB4418 is a medium-early maturing, hollow-stemmed, short wheat with white chaff. WB4418 has below average yield, below average test weight, and average protein, with average winter survival. WB4418 appears to be moderately resistant to stripe rust under Pacific Northwest conditions. WB4418 has medium PPO with below average mill and baking characteristics. PVP, Title V is issued (Certificate #201800530).

**Yellowstone** – hard red winter wheat developed by the Montana Agricultural Experiment Station and released to seed growers in 2005. Yellowstone is a very high yielding winter hardy variety with medium test weight, maturity, height, and grain protein. Yellowstone has excellent baking and good Asian noodle quality. It is moderately resistant to TCK smut and resistant to stripe rust, but susceptible to stem rust. Yellowstone has been the leading winter wheat variety planted in Montana since 2012. PVP, Title V has been issued (Certificate #200600284).

### Plant Variety Protection

The Plant Variety Act, signed into law in 1970, offers legal protection to developers of new varieties of plants which reproduce sexually – that is, through seeds. The law provides for a Plant Variety Protection Office in the U.S. Department of Agriculture. The office receives and processes applications and when “novelty” is established, issues a certificate granting protection rights specified by the applicant.

The owner (or developer) holding a “certificate of protection” has complete control over the variety for 20 years. The law provides two types of protection:

1. **Without Seed Certification**
   The owner of the protected variety may exclude others from reproducing the variety, selling it, offering it for sale, importing or exporting it, or use it in the commercial production of a hybrid or a different variety without permission. In this sense, the owner of a protected variety may bring civil damage action against anyone who infringes upon his rights.

2. **Certified Seed Option**
   The owner may specify that the seed of his variety “…be sold or advertised only as a class of Certified Seed”. Production and sale of such seed by variety name, when not certified, constitute a violation of the Federal Seed Act. This means of protection may be used extensively for publicly as well as privately developed varieties.

Amendments to the Plant Variety Protection Act (PVPA) have passed both houses of Congress and been signed into law by the President. These amendments went into effect in 1995. The farmers exemption has been changed for new varieties. Seed for varieties issued a certificate after April 4, 1995, may only be purchased from the owner or his agent. A farmer can only save seed of these
varieties for use on his own farm and cannot sell seed of the protected variety to his neighbor.

A variety protected under the certification option does not permit a farmer producing seed to sell or offer for sale or advertise by variety name unless it is certified. Sale of such seed by variety name as uncertified seed will constitute a violation of the Federal Seed Act. Interstate movement of seed is subject to inspection by Federal Seed Control officials. Seed within the state is subject to inspection by State Department of Agriculture inspectors.

Owners of protected varieties will give public notice that their variety is protected by affixing to the label or container the words: “Unauthorized Propagation Prohibited” or the words, “Unauthorized Seed Multiplication Prohibited”. Producers must check the label (tag) or the container for the above wording.
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Note: Information in this article is available on the web at:
http://plantsciences.montana.edu/crops